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## The Impact of Online Professional Development on Online Teaching in Higher Education

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THE IMPACT OF ONLINE PROFESSIONAL DEVELOPMENT  
ON ONLINE TEACHING IN HIGHER EDUCATION

by

William John Ganza

A dissertation submitted to the College of Education and Human Services  
in partial fulfillment of the requirements for the degree of

Doctor of Education in Educational Leadership

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COLLEGE OF EDUCATION AND HUMAN SERVICES

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## ABSTRACT

This study explored the impact a professional development program (Online Professor Certificate Program, OPCP) had on teaching online in higher education—specifically, the impact on faculty members’ teaching presence. The conceptual and theoretical model utilized the community of inquiry framework and both critical theory and transformational learning theory.

This case study used data from various sources, including questionnaires, content analysis, and interviews. The overall results indicate that the OPCP had some impact on teaching presence, but not as much as anticipated. The study found that faculty who completed the OPCP were more engaged in their online classes than those who had not participated in the OPCP, as measured by the number of discussion posts. No statistically significant difference in teaching presence was found between participants’ retrospective pre- and post-OPCP responses. Participants mentioned mentoring and andragogy as the two most important parts of the OPCP.

Educational leaders have an economic interest in this issue, as online enrollments increased significantly over the past decade, and the trend will likely continue. These increased online enrollments have impacted online teaching, creating a growing need for high-quality online teaching. Faculty need professional development programs to help them become more effective online teachers. The professional development programs need to be evaluated for effectiveness beyond the satisfaction level, with a focus on program outcomes.

## CHAPTER 1 INTRODUCTION

Higher education faculty development is intended to refresh faculty and provide them with the knowledge and tools needed to enhance performance, typically involving the domains of teaching, research, and service. Faculty teaching performance can be measured in numerous ways, one of which is in terms of student performance outcomes. Connecting faculty development for teaching to student outcomes, however, is problematic. Additionally, linking faculty development for teaching to changes in faculty attitudes and behaviors about teaching can prove challenging.

Online professional development opportunities for faculty members, both synchronous and asynchronous, are relatively new in the educational arena (Dede, 2006a), but have been available in the business sector for nearly two decades. Online professional development specifically designed for teaching online is even newer, and little research has been conducted to assess the effectiveness of such professional development programs.

This study presents research pertaining to an online faculty professional development program and attempts to discover the impact this online professional development program has had on faculty attitudes and behaviors, measured by online teaching presence, and as conceptualized by the community of inquiry framework (Garrison, Anderson, & Archer, 2000; Rourke, Anderson, Garrison, & Archer, 1999). The next section discusses the context and issues related to online teaching and learning.

## Context

Over the past several years, online learning, typically defined as 80% of the coursework being completed online, has increased significantly (Allen & Seaman, 2003, 2004, 2005, 2006, 2007, 2008, 2010a, 2011; Bourne & Moore, 2005; Chari & Haughey, 2006; Lokken, 2009; National Education Association, 2009; Seaman, 2009). However, the quality of online classes has been an issue (Carr, 2000; Clay, Rowland, & Packard, 2008; Flood, 2002; Frankola, 2001; Steinman, 2007). Some researchers have found lower retention rates and lower success rates for online students than for face-to-face students (Smith Jaggars & Xu, 2010; Xu & Smith Jaggars, 2011). The November 2011 supplemental issue of the *Chronicle of Higher Education* was devoted to online learning and an examination of the problems of the virtual classroom. Other research, however, contradicts these concerns (Gratton-Lavoie & Stanley, 2009; Means, Toyama, Murphy, Bakia, & Jones, 2009) and finds that students perform better in online classes. Still, many people remain convinced that online learning does not produce stable student outcomes equivalent to traditional, face-to-face delivery. Part of the reason is that faculty implementation of online learning in higher education varies significantly (Clay, 1999; Hunt, 2009; Magnussen, 2008; Mitchell & Geva-May, 2009), and faculty preparation for teaching online in higher education also varies significantly (Lokken, 2009). Although the online environment has grown over the years, little research and practice has focused on the role of preparing faculty to teach online.

As adult learners, faculty members and the students they teach share the same learning process. Adult learning differs from the learning of children (Knowles, 1950), particularly as adults are more centered on applying knowledge. Critical theory

(Brookfield, 2005) and transformational learning theory (Merriam, 2001a; Mezirow, 1991) help explain the adult learning process. Events trigger or transform experiences into learning. The impact of these experiences helps transform people and change their attitudes and behaviors.

Evaluating effective teaching is difficult, and many experts do not agree on an appropriate evaluation method. Evaluating online teaching is no exception. Some researchers have constructed competencies (Palloff & Pratt, 2001, 2005, 2007; Smith, 2005), and others have outlined benchmarks (Phipps & Merisotis, 2000). However, measuring these concepts is elusive. Others have devised rubrics to examine teaching (MarylandOnline, 2008; Southern Regional Education Board, 2006a), but these rubrics place almost exclusive emphasis on course design and construction, without examining faculty members' actual teaching or behaviors.

Chickering and Gamson (1987) proposed seven principles of effective undergraduate teaching: contact between faculty and students, cooperation among students, active learning, prompt feedback, time on task, emphasis on high expectations, and respect for diversity. These principles are often applied to online teaching (Graham, Cagitay, Lim, Craner, & Duffy, 2001). For example, the community of inquiry framework (Garrison et al., 2000) incorporated the seven principles of effective teaching (Shea, Pickett, & Pelz, 2003). The community of inquiry framework also includes teaching presence, social presence, and cognitive presence (Cleveland-Innes, Garrison, Ice, Richardson, & Swan, 2009; Garrison et al., 2000; Rourke et al., 1999). The overlap of teaching presence, social presence, and cognitive presence represents students' educational experiences and encompasses the seven principles (Shea et al., 2003).

Rourke et al. (1999) defined social presence as “the ability of learners to project themselves socially and emotionally in a community of inquiry” (p. 56). Cognitive presence was defined as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Rourke et al., 1999, p. 56). Teaching presence was defined as “the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). Although all three presences play crucial roles in the community of inquiry framework, this study focuses on teaching and teaching presence in higher education, which involves both cognitive and social processes. This study focuses mostly on discussion board postings. The community of inquiry framework is used to measure teaching in this study.

### **Research Questions**

The purpose of this study was to explore the impact that online professional development had on teaching online, using the community of inquiry framework. The primary research question of this study focused on the impact of faculty professional development on teaching: How does an online professional development program in teaching online impact faculty? Four subquestions stemmed from this primary research question: (a) Does an online professional development program change attitudes about online teaching? (b) What changes in teaching practices, if any, do faculty report after participating in an online professional development program? (c) What are the observed differences in teaching practices, if any, between faculty who have completed an online professional development program and those who have not completed a program? and (d)

What part or aspect of an online professional development program had the greatest impact on faculty in developing or strengthening ideas and behaviors about teaching online?

### **Methodology**

The methodology in this study was a mixed methods case study design, using both qualitative and quantitative methods. That approach was used because qualitative and quantitative methods ask and answer different questions. In this study, data were collected using questionnaires, content analysis, and interviews.

The first research method employed was a questionnaire. The questionnaire was a retrospective pre-training and post-training survey. Building on the community of inquiry questionnaire for students (Garrison, Cleveland-Innes, & Fung, 2004), a questionnaire was constructed to measure the community of inquiry's teaching presence from a faculty perspective. Faculty who had completed the OPCP were asked to answer the questions, exploring their teaching attitudes and behaviors prior to participating in the OPCP. The same faculty were asked to answer the same questions, as they pertained to their attitudes and behaviors after completing the OPCP. The purpose of the questionnaire was to assess any change in teaching practices that resulted from participation in the OPCP.

Second, a quantitative content analysis was used to analyze the discussion board posts of faculty who completed the Online Professor Certificate Program (OPCP). The posts were compared to the posts of faculty members who had not completed and were not enrolled in the OPCP. To assess teaching presence in online classes, content analysis focused on faculty members' actual behaviors of discussion board postings. Using the

quantitative content analysis technique and coding scheme developed by Rourke et al. (1999), teaching presence was examined. Teaching presence was compared across groups of faculty to assess the differences between faculty who completed the OPCP and faculty who had not completed the OPCP.

The final research method used in this study involved qualitative interviews. These qualitative interviews assessed which component of the OPCP had the greatest impact on changing attitudes and behaviors about teaching. The qualitative interviews also attempted to connect faculty development to student outcomes, as faculty members perceived these outcomes. The triangulation of research methods in this study helped validate the findings. Each method made a specific contribution, but all of the methods overlapped. Triangulation allowed for increased credibility of the study's findings.

### **Significance of the Study**

This study is important for various reasons. First, little research has been conducted to show the impact professional development has on teaching and student outcomes. Some researchers who evaluate professional development (D. Kirkpatrick & Kirkpatrick, 2006; J. Kirkpatrick, 1959) and faculty development (Guskey, 2000; Guskey & Yoon, 2009) have recommended that evaluation of faculty development should go beyond initial reactions and satisfaction. However, most faculty and professional development programs do not accomplish that goal. Therefore, this study was intended to help move professional development evaluation beyond the reaction phase, to exploring the impact professional development has on teaching attitudes and behaviors.

In addition and related to the impact of evaluating professional development, this study contributes to the community of inquiry literature (Akyol et al., 2009; Akyol &

Garrison, 2008; Rourke et al., 1999). Over the past decade, the community of inquiry framework has gained acceptance but has mainly focused on impact on students. Few studies have linked professional development and the community of inquiry framework (Cleveland-Innes et al., 2009). This study links professional development activities to the community of inquiry literature.

This study is also significant because it links bodies of literature that have not been thoroughly connected in the past. A wealth of knowledge exists about adult learning theory, beginning with Malcolm Knowles's (1950) research. This study connected adult learning theory by Knowles and Mezirow (1991) to professional development for teaching. Transformational learning theory (Brookfield, 1995; Merriam, 2001b) contributes to faculty development, and this study helps strengthen the relationship between these two bodies of literature.

The final significant contribution of this study rests with the unanswered questions that arose. Although this study attempted to address how a professional development program can impact faculty and students, many questions surfaced during and after the investigation, such as the following: How can faculty development programs be more effective? What faculty development methods produce the best outcomes in changing attitudes? What faculty development methods produce the best outcomes in changing behaviors? What part of the faculty development program has the greatest impact on participants? Why is faculty development effective for some participants, but not for others? How can the community of inquiry better inform the practice of faculty development? How can teaching presence better inform the practice

of faculty development? This study provides a path for additional research that can inform faculty professional development.

### **Chapter Summary**

This introductory chapter presented the primary research question: How does an online professional development program in teaching online impact faculty? The four subquestions stemming from the primary research question were as follows: (a) Does an online professional development program change attitudes about online teaching? (b) What changes in teaching practices, if any, do faculty report after participating in an online professional development program? (c) What are the observed differences in teaching practices, if any, between faculty who have completed an online professional development program and those who have not completed a program? and (d) What part or aspect of an online professional development program had the greatest impact on faculty in developing or strengthening ideas and behaviors about teaching online?

Chapter 2 presents the literature review, which focuses on five distinct but related areas. Chapter 3 examines this study's mixed methods approach. A quantitative content analysis was the primary method, used to compare discussion posts of online faculty members who had completed the OPCP to posts of online faculty members who had not participated in the OPCP. A faculty retrospective pre- and post-training questionnaire about teaching presence supplemented the quantitative content analysis. The qualitative portion of this study involved interviews with participants who completed the OPCP. To answer this study's research questions, multiple methods were needed.

Chapter 4 explores the data analysis and results from the study. The data analysis is divided into three parts, each reflecting a specific data set. One data set focused on the

self-reported retrospective pre- and post-training teaching presence scores. Another data set focused on the quantitative content analysis, comparing courses taught by faculty members who had completed the OPCP to courses taught by faculty members not involved in the OPCP. The final data set consisted of structured interviews of 18 faculty members who completed the OPCP within 18–24 months prior to this study.

Chapter 5 starts with a summary of the study and the findings, along with the major conclusions. A section on the study's limitations follows, which includes a section on recommendations for educational leaders. Chapter 5 concludes with recommendations for future research.

## CHAPTER 2 LITERATURE REVIEW

The research question under investigation in this study focused on the impact of faculty professional development on teaching. Specifically, the primary research question was as follows: How does an online professional development program in teaching online impact faculty? Four specific subquestions stemmed from the primary question: (a) Does an online professional development program change attitudes about online teaching? (b) What changes in teaching practices, if any, do faculty report after participating in an online professional development program? (c) What are the observed differences in teaching practices, if any, between faculty who have completed an online professional development program and those who have not completed a program? and (d) What part or aspect of an online professional development program had the greatest impact on faculty in developing or strengthening ideas and behaviors about teaching online?

The primary and specific research questions led to an examination of five disparate, but interrelated, research areas. Chapter 2 presents a literature review of the following: growth of online education, adult learning and transformational learning theory, online teaching and learning models, faculty development, and evaluating faculty professional development activities. The first section, the literature review on the growth of online learning, gives the reader a broader context in which to understand this study's significance. In the second section, information pertaining to adult learning theory

provides a theoretical foundation for the process investigated in this study. The third section, which addresses online teaching and learning models, familiarizes the reader with different approaches to measuring quality in online teaching. College-level faculty professional development activities are reviewed in the fourth section. Last, the fifth section examines past literature related to evaluation of professional development activities, which provides an overview of literature relevant to this study. These five research areas and their corresponding literature reviews constituted the conceptual and theoretical frameworks of this study.

### **Online Learning History and Background**

This section provides an overview of the growth of online learning in higher education and addresses the more salient issues concerning online learning. Online learning's past growth patterns indicate that the delivery method has become a significant part of the educational system, especially in higher education. Although not all higher educational institutions fully embrace online or hybrid/blended learning, most colleges offer some type of distance education courses, and many times these course offerings are online and Web-based.

Since 2000, several authors have documented the growth of online learning (Allen & Seaman, 2003, 2004, 2005, 2006, 2007, 2008, 2010a, 2011; Chari & Haughey, 2006; Lokken, 2009; Moloney, 2006; National Education Association, 2009). In 2003, Allen and Seaman developed the Sloan Survey of Online Learning, to answer previously unanswered questions related to online education. At that time, no national statistical information existed for online higher education. When the first survey was administered in 2003, the response rate was 32.8%, 994 of the 3,033 institutions contacted. After

completion of data collection and analysis, weights were applied to percentages to approximate the population at large. In 2003, 90% of all public-sector institutions offered at least one online class. In the private sector, almost 45% of for-profit colleges and almost 55% of nonprofit colleges reported offering at least one online class. By 2003, the public sector was entrenched in online learning; however, only about half of the private sector colleges had entered the online arena. In 2002, online enrollments of students taking at least one online class was 1,602,970 and constituted 9.6% of total enrollments. By the fall of 2010, online enrollments of students taking at least one online class was 6,142,280, which represented 31.3% of all enrollments (Allen & Seaman, 2011).

The Instructional Technology Council (ITC) has also reported online enrollment increases since 2005 (Lokken, 2009). The ITC focuses on community colleges and the growth of online learning in ITC member institutions. From fall 2006 to fall 2007, the ITC reported an 11.3% growth in member institutions, consistent with the Sloan survey's 12.9% growth, which represented 972,669 enrollments. The ITC, however, does not report actual numbers, only growth from the previous year. The growth in online learning is not restricted to U.S. collegiate education. The increase of online course offerings has also been observed in high schools (National Education Association, 2009) and in other countries, such as higher education in India (Chari & Haughey, 2006). Over the past decade, online learning has grown significantly.

Growth in online learning is attributable to numerous factors (Allen & Seaman, 2003, 2004, 2005, 2006, 2007, 2008; Dykman & Davis, 2008; Harting & Erthal, 2005; Newton & Ellis, 2005; Porter-Wenzlaff & Froman, 2008; White, Roberts, & Brannan,

2003). Allen and Seaman (2008) reported that academic officers, provosts, and academic vice presidents have viewed online learning as important to their institutions' overall strategic plans, and many institutions view online learning as critical to success.

Similarly, Newton and Ellis (2005) reported that administrators' acceptance of online learning was critical to effective implementation. In some disciplines, such as nursing, online learning can reduce costs and increase access for students (Porter-Wenzlaff & Froman, 2008; White et al., 2003). Harting and Erthal (2005) argued that the growth of online learning was merely an extension of the history of distance education—a history they said began in the 1700s, with the first correspondence course in shorthand. Harting and Erthal traced the different modes of distance education throughout history, arguing that with the advent of computers and the Internet, online courses were an inevitable progression.

Dykman and Davis (2008) argued that technological advances, such as those in information technology, made online learning feasible, allowing academic institutions to reach previously inaccessible student populations, without much additional infrastructure expense. Certainly, technological advances have enabled online learning, but without academic leaders' support, online learning would not become as pervasive. Academic leaders envision online learning's potential, which has partially spurred the growth of online learning.

While the growth rate of online learning is well established in literature (Allen & Seaman, 2003, 2004, 2005, 2006, 2007, 2008, 2010a, 2011; Bernard et al., 2004; Chari & Haughey, 2006; Lokken, 2009), the quality of online instruction has been debated. As Dykman and Davis (2008) noted about online teaching, "Teaching online is very

different from conventional teaching and it is not easy. Planning online course-work is much more demanding and student-teacher relationships, much more complex. Once mistakes are made, it is really difficult to recover fully in an online environment”

(Dykman & Davis, 2008, p. 14).

Attrition and withdrawal rates have frequently been cited as more problematic in online courses, compared to their face-to-face counterparts (Carr, 2000; Clay et al., 2008; Flood, 2002; Frankola, 2001; Smith Jaggars & Xu, 2010; Steinman, 2007; Xu & Smith Jaggars, 2011). In his research, Flood (2002) found attrition rates as high as 80% in online classes, and others have found attrition rates in online courses 20% higher than in face-to-face classes (Carr, 2000; Frankola, 2001). Smith Jaggars and Xu (2010) found that in both Washington State and Virginia, online students had higher withdrawal rates and lower success rates. Additionally, higher withdrawal rates have been observed in online classes—in some cases, 50% higher than in face-to-face classes (Clay et al., 2008).

Attrition and withdrawal rates are only two indicators of potential problems with online classes. Other studies have indicated that withdrawal and attrition rates are not always higher when compared to face-to-face classes (Tallent-Runnels et al., 2006; Thomas, 2002). A meta-analysis sponsored by the Department of Education (Means et al., 2009) found that online classes produce better student outcomes than face-to-face classes. Gratton-Lavoie and Stanley (2009) discovered that students performed better or the same in online classes, compared to hybrid/blended or face-to-face classes. Although classroom and distance education instruction varies greatly, Bernard et al. (2004) found that the two delivery modes were comparable.

When comparing online and traditional learning modes, student performance results are mixed. The results are also mixed concerning online course attrition withdrawal rates. To fully understand these rates, one must examine reasons for student withdrawals and low retention rates in online courses.

Student withdrawal or retention rates vary for many reasons (Liaw, 2008; Muilenburg & Berge, 2005; C. Robinson & Hullinger, 2008; Rovai, Ponton, Wighting, & Baker, 2007; Rovai, Wighting & Liu, 2005; Sahin, 2008; Steinman, 2007). Muilenburg and Berge (2005) found that one important barrier to students' online success was administrative or instructor issues. Students reported that many instructors did not know how to teach online, and instructional materials were not always delivered in a timely manner. Students also reported lower-quality materials and instruction online than in their face-to-face classes (Muilenburg & Berge, 2005).

Steinman (2007) argued that students drop out because of the learner-to-instructor transactional distance. Transactional distance is the closeness students perceive with their instructors in the online learning environment. Steinman stated that personal contact may be less prevalent in online classes. That lack of personal contact can make students feel detached, and that detachment allows students to withdraw from the course.

However, in their study, C. Robinson and Hullinger (2008) found that students reported more engagement in online classes than students in face-to-face classes. Sahin (2008) revealed a correlation between students' learning styles and their preferences for online or face-to-face classes. Students who preferred authentic learning and active learning often took online courses. Liaw (2008) found that students' self-efficacy was the most critical of the four factors examined that affected student satisfaction with online

learning. Motivational differences of students in face-to-face and online classes did not appear to impact withdrawal rates; however, online students did feel less connected to the college community (Rovai et al., 2007; Rovai et al., 2005). Overall, attrition and withdrawal rates of students enrolled in online courses differ from instructor to instructor. Therefore, one cannot definitively declare that attrition and withdrawal rates are always higher in online classes than in face-to-face classes.

Although attrition and withdrawal rates vary among instructors and delivery modes, the level of student engagement in online classes is a major factor that impacts persistence and success in online learning (Bonnell, 2008; Boston et al., 2009; Jennings & Bayless, 2003; Means et al., 2009; C. Robinson & Hullinger, 2008; Steinman, 2007; Tello, 2007). Tello (2007) found that student persistence was linked to student attitudes toward interaction. Student engagement with other course participants accounted for over 25% of the variance in course persistence rates. Boston et al.(2009) found that online communication impacted student retention more than any other variable. Those students who felt comfortable communicating online were more likely to persist. Bonnell (2008) reported that feedback to students in online courses was critical to their success, and the timing and frequency of feedback directly impacted success. Using test grades, nontest grades, and final course grades, Jennings and Bayless (2003) found no statistically significant difference between traditional, classroom-based instruction and online, Web-based instruction. The meta-analysis conducted by the U.S. Department of Education (Means et al., 2009) also confirmed no difference in success in online classes, compared to traditional, classroom-based instruction. Engagement in both online and face-to-face classes impacts persistence and the overall success of students' learning.

In addition to faculty's ability to engage students in the online learning environment, faculty implementation and acceptance of distance education and online learning is another issue presented in the literature. Clay (1999) argued that many faculty members embraced distance education and saw many benefits to distance education, such as reduced travel, increased flexibility, and motivation to use technology. However, other faculty resisted online instruction. Clay reported that instructors feared increased workloads, changes in their roles as instructors, lack of technical support, and reduced course quality. Schrum and Ohler (2005) reported that although faculty had positive interactions with students online, faculty also reported a perceived lack of support for online teaching, particularly in effective online pedagogy. Wilson (2001) found that while faculty were motivated to use technology to improve student learning in online courses, faculty were unrewarded for these efforts, felt the infrastructure was insufficient for the technology, and were "underprepared in areas related to online instruction" (Wilson, 2001, p. 71).

Hunt (2009) pointed out that faculty attitudes impact the success or failure of online programs. Some instructors felt that teaching online required more effort, and some were concerned with lack of interaction in online classes. Magnussen (2008) reported that 80% of the online faculty surveyed reported that they spent less time in traditional classes than online, Web-based classes. Sloan-C's benchmarking study (2009a), which focused on faculty acceptance of online learning, reiterated the fears some faculty expressed. The study reported that faculty acceptance was a critical barrier to adoption of online learning. Senior administrators had to foster the proper environment

for online learning to grow, but faculty motivation was critical to online learning's success.

Online learning has grown significantly over the past decade (Allen & Seaman, 2011). Although some authors have found problems with the quality of online learning (Smith Jaggars & Xu, 2010; Xu & Smith Jaggars, 2011), others have not found these differences (Means et al., 2009). The overall growth of online learning is part of the reason the present study is significant. Online learning continues to grow and is impacting more and more students. As online learning grows, more online faculty are needed, and quality professional development programs need to be established for faculty to learn the requisite skills. The next section examines adult learning and transformational learning theory, which are the basis for the theoretical model used in this study.

### **Adult Learning Theory: Transformational Learning**

The process whereby professional development activities impact learning falls under the domain of adult learning. As early as 1926, the foundational work in the field of modern adult education and adult learning theory began, with the establishment of the American Association for Adult Education. Two basic streams of inquiry emerged at that time, one termed the scientific stream and the other called the artistic or intuitive/reflexive stream (Knowles, Holton, & Swanson, 2005). Thorndike, Bregman, Tilton, and Woodyard (1928) advanced the scientific stream, which focused on discovering new knowledge through scientific investigation. The artistic stream focused on discovering new knowledge through intuition and an analysis of experiences. Lindeman (1926) advanced the artistic stream, and he was influenced strongly by John

Dewey. Although both streams failed to lead to a theory of adult learning, they provided the foundation for additional inquiries into adult learning, leading to adult learning frameworks.

The next major advance in adult learning theory occurred in the 1970s, when several andragogical frameworks appeared in the literature (e.g. Godbey, 1978; Ingalls & Arceri, 1972; Knowles, 1970, 1973, 1975; Stewart & Waight, 2008). The most notable of these frameworks was proposed by Knowles, delineated in his 1950 text *Informal Adult Education*. Knowles (1980) was credited with developing the andragogical model, which stressed that teaching adults is and should be different from teaching children. Knowles's andragogical model contained five basic assumptions: (a) adult learners direct their own learning; (b) adult learners have extensive life experiences, which are resources for learning; (c) adult learners have needs related to their changing social roles; (d) adult learners are more problem centered; and (e) adult learners are motivated more by internal than external factors. Knowles also asserted that adults are self-directed and take responsibility for the decisions they make. Some considered the andragogical framework an adult learning theory. However, others considered the andragogical framework a "model of assumptions about learning or a conceptual framework that serves as a basis for an emergent theory" (Knowles, 1989, p. 112).

Around the same time that Knowles (1970, 1973, 1975) promoted andragogy in the educational field, *self-directed learning* appeared as another model that differentiated adult learning from pedagogy. Tough (1967, 1971), one of the earliest researchers of self-directed learning, examined the systematic learning that occurred in adults, outside of a classroom and independent of an instructor; self-directed learning occurred as part of

everyday life. Tough's early work on self-directed learning was descriptive. Since then, three main research areas have emerged in literature on self-directed learning—the goals, the process, and the learner (Merriam, 2001a). The goals for self-directed learning varied by the researcher's philosophy, but most tended to focus on learner capacity, transformational learning, or emancipatory learning/social action (Merriam, 2001a).

Tough (1967, 1971) and others first delineated the learning process as linear and focused on resources and instructional formations. Since that time, research has focused on the learning context, the learner, and the learning environment. The current research area in self-directed learning examined the learner in terms of educational attainment, creativity, and learning style. Self-directed learning, along with andragogy, were major influences of subsequent adult learning theories, such as transformational learning (Mezirow, 1985).

Transformational learning has been conceptualized in different ways.

Baumgartner (2001) delineated four distinct approaches to transformational learning and noted that Mezirow's theory (1991) had generated most of the empirical research related to transformational learning. Mezirow's approach was cognitive and rational, grounded in constructivist theory, and consisted of 10 stages. Adult learning was viewed as a process of perspective transformation, in response to some unexpected event that caused schema to be altered. Perspective transformation was defined as the process where prior ways of thinking and beliefs were transformed into new ways of thinking and believing. Of primary importance is that critical reflection triggers new and alternative ways of thinking. Critical reflection frees individuals to change existing cognitive schema and to adopt new ways of thinking and believing. Over time, Mezirow's (1985) theory was expanded from its initial postulation as a linear process (Baumgartner, 2001). The

triggering event, originally conceptualized as a single event, may actually be a long, cumulative process, such as that which takes place in a professional development program. Additionally, context and culture seemed more important than Mezirow originally postulated. Other researchers, such as Merriam (Merriam, 2001b) and Brookfield (1986), have expanded Mezirow's transformational theory.

Brookfield (1986) pointed out that the analytic component leading to perspective transformation was best achieved through interaction with facilitators, who challenge learners' previously held beliefs and values. For Brookfield, the facilitator's role was paramount to perspective transformation. Building on the Marxist tradition, Brookfield (2005) argued that critical theory was key to transformation and genuine adult learning.

Although Brookfield (1986) saw critical theory as essential to transformational learning, Merriam (2004) argued that transformational learning can and does take place without critical reflection. Merriam stated that to think critically, one needs to cognitively operate at the formal operations level. However, many adults do not operate at the formal operations level; nevertheless, these adults still experience transformational learning. Merriam questioned the roles that cognitive development and critical thinking play in transformational learning and stressed the importance an event or series of events can have in generating a transformation in thinking, and ultimately to behavior changes (Merriam, Caffarella, & Baumgartner, 2007).

Existing literature about adult learning is vast, but few adult learning theories have been proposed, and an even smaller number of the theories have been empirically tested. Recently, transformational learning theory has been applied to a number of different situations (King & Heuer, 2008; Madsen, 2009; Walton, 2010; Young,

Mountford, & Skrla, 2006). These studies showed evidence for the 10 stages that Mezirow (1991) proposed.

Professional development activities, combined with other events, may trigger perspective transformation. Using Mezirow's 10 stages (1991), the availability of professional development and knowledge of others engaging in professional development activities may produce a disorientating dilemma (stage 1) that can lead to self-examination (stage 2) and critical assessment of one's assumptions about teaching (stage 3). Examining one's assumptions about teaching can lead to recognition that others have transformed and changed their teaching (stage 4). One may then explore options for change (stage 5) and adopt an action plan (stage 6) to acquire the necessary knowledge and skills (stage 7), to implement these new behaviors (stage 8), and to build competence (stage 9). At that point, the individual is ready to integrate these changes into his or her professional and personal life (stage 10). In the present study, transformational learning theory was used as the theoretical model to explore how professional development impacts teaching behaviors and practices.

### **Online Teaching and Learning Models**

Measuring quality teaching and learning is a difficult process, whether in a face-to-face or online classroom. Quality teaching and learning can have different meanings to different people, and how quality teaching is measured varies from researcher to researcher. The following section reviews the pertinent literature about the quality of online teaching and how online teaching has been operationalized.

Smith (2005) proposed a model of online instruction that included 51 competencies for online instructors. These competencies were divided into three areas:

(a) those needed prior to the start of a course; (b) those needed during the course; and (c) those needed after the course. Smith's proposed competencies addressed the 24 benchmark items for online teaching, which the Institute for Higher Education Policy presented (Phipps & Merisotis, 2000). Competencies needed prior to the course start date revolved around syllabus construction, instructor knowledge of technology, and basic course organization. The competencies needed during the course included knowledge about facilitation and interaction, active learning, effective and efficient course management, practices to promote participation, and the learner-centered approach. Competencies needed after the course ended included use of technology to report and calculate grades, as well as course evaluations conducted by both students and the instructor teaching the class (Smith, 2005).

Some of the individual competencies Smith presented have been researched, such as Palloff and Pratt's (2001, 2005, 2007) competencies, which dealt with active learning, interaction, facilitation, collaborative learning, and learning communities. However, many of Smith's competencies remain untested constructs, such as managing student expectations, harnessing the technology, and use of humor. However, the constructs do provide one way to examine quality online teaching.

The Southern Regional Education Board (SREB) presented another approach to assessing online teaching. SREB proposed a rubric for the essential principles of high-quality online teaching, online courses, and professional development (Southern Regional Education Board, 2006a, 2006b, 2006c, 2006d, 2008). The checklist for high-quality online teaching consists of four categories: state qualifications and instructor credentials; curriculum, instruction, and student assessment; management; and evaluation. Although

these measures were designed for the K–12 educational system, they provide an alternative resource for developing assessment tools used for online courses in higher education—especially the items related to curriculum, instruction, and assessment.

The Quality Matters rubric (MarylandOnline, 2008) presents another method to examine online teaching. The rubric identified 40 items in eight general categories: accessibility, learner support, course technology, learner engagement, resources and materials, assessment and measurement, learning objectives, and course overview and introduction. The Quality Matters rubric and the SREB course checklist (2006a) are effective tools for evaluating developed courses, but these tools do not examine the instructor's role in online teaching.

Chickering and Gamson (1987) proposed seven principles for effective practice in undergraduate education, which were intended to improve undergraduate education in the traditional, face-to-face classroom setting. The seven principles are encouraging contact between faculty and students, cooperation among students, active learning, prompt feedback, time on task, high expectations communicated to students, and respect for diversity and the different ways that students learn. Chickering and Gamson presented general ideas on how to implement the seven principles, which focused on face-to-face classroom teaching. Graham et al. (2001) took Chickering and Gamson's seven principles and applied them to online learning, providing examples of how to implement the principles in the online classroom.

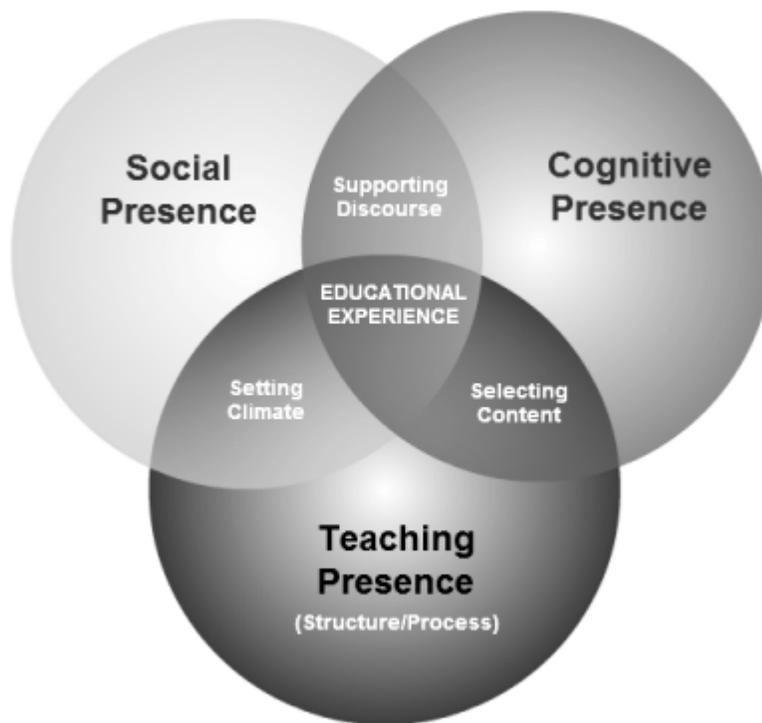
Chickering and Gamson's (1987) seven principles are seen in the teaching and learning model presented by Donovan, Bransford, and Pellegrino (2000) in *How People Learn: Bridging Research and Practice*. Donovan et al. discussed how to design

classroom environments to optimize learning, identifying four critical attributes of learning environments.

- The learning environment must be learner-centered, and teachers must pay attention to how students progress. Teachers must also understand students' skill levels, interests, and knowledge.
- The environment must be knowledge-centered. Knowledge must be organized to support understanding and learning.
- Formative assessments are necessary to guide instruction, and learning should be assessment-centered.
- Learning takes place in a community.

Shea et al. (2003) postulated that the seven principles of good practice are where knowledge-centered, learner-centered, and assessment-centered teaching practices overlap.

Garrison et al. (2000) proposed a model that emphasizes higher education and online learning, while still incorporating the seven principles of effective undergraduate teaching practice. Garrison et al.'s model also addressed Donovan et al.'s (2000) four attributes of learning. This community of inquiry model was later expanded, clarified, and tested (Akyol et al., 2009; Akyol & Garrison, 2008; Anderson et al., 2001; Arbaugh, 2008; Arbaugh et al., 2008; Arbaugh & Hwang, 2006; Garrison, 2007; Garrison et al., 2004; Garrison, Cleveland-Innes, Koole, & Kappelman, 2006; Garrison & Vaughan, 2008; Rourke, Anderson, Garrison, & Archer, 2001a, 2001b; Vaughan & Garrison, 2005, 2006). In the community of inquiry model, Garrison et al. (2004) examined three distinct presences in online learning—social, cognitive, and teaching (Teaching and Learning Centre, 2007). Students' educational experiences occur in the area where the three presences overlap (Figure 1).



*Figure 1.* Community of inquiry model depicting educational experience as the overlap of cognitive presence, social presence, and teaching presence. Adapted from “Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education,” by D. R. Garrison, T. Anderson, and W. Archer, 1999, *The Internet and Higher Education*, 2(2–3), p. 88. Copyright 2007 by Teaching and Learning Centre. Used with permission.

Social presence was defined “as the ability of learners to project themselves socially and emotionally in a community of inquiry” (Rourke et al., 1999, p. 56). In online courses, social connections are especially important for learners. Learners become distant when they are not in a face-to-face classroom; instructors need to be aware of that factor and facilitate social presence for students. Social presence includes affective, interactive, and cohesive elements (Hughes, Ventura, & Dando, 2007). Social presence deals with open communication, group cohesion, and personal/affective relationships (Akyol & Garrison, 2008) and indicates that a person is willing and available to engage and connect with others. As a concept, social presence is important in the community of inquiry framework (Rourke et al., 2001a; Teaching and Learning Centre, 2007). Several

researchers (Hughes et al., 2007; Rourke et al., 1999; Whipp & Lorentz, 2009) have examined social presence in the online classroom, demonstrating that the factor is critical to successful online learning.

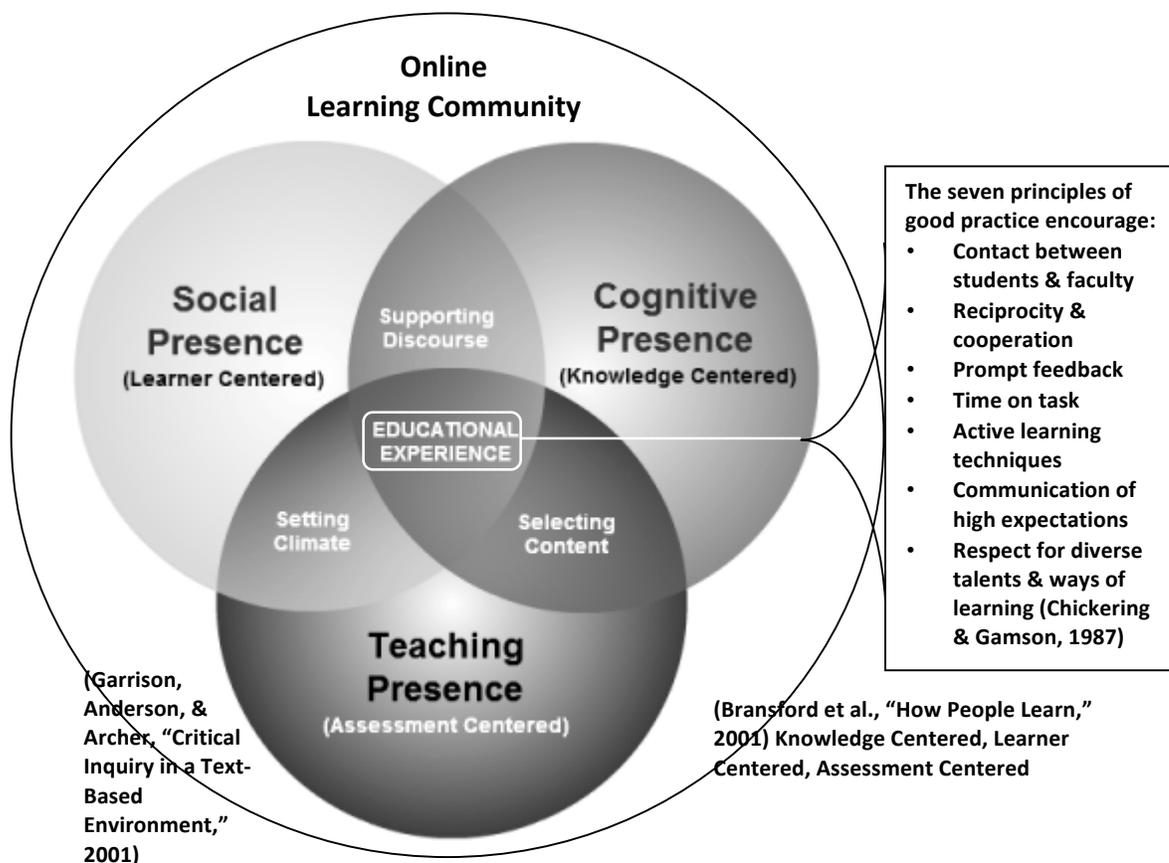
Cognitive presence was defined as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Rourke et al., 1999, p. 56), as well as the ability to assess critical thinking as a process and as an outcome (Garrison, Anderson, & Archer, 2001). As a process, critical thinking is the deep understanding that a person obtains. As a product, critical thinking is typically demonstrated in the work people produce. Cognitive presence “consisted of the phases triggering event, exploration, integration and resolution” (Akyol & Garrison, 2008, p. 4). Both the process and the outcome are cognitive presence (Teaching and Learning Centre, 2007). Several researchers (Dunlap, Sobel, & Sands, 2007; Engstrom, Santo, & Yost, 2008; Garrison et al., 2001; McLoughlin & Mynard, 2009; Whipp & Lorentz, 2009) have conducted studies on cognitive presence, showing that it, like social presence, is a major part of online teaching.

The final area of the community of inquiry framework is teaching presence. Teaching presence was defined as “the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson et al., 2001, p. 5). Teaching presence permeates the online learning environment, including course design and organization, facilitation of class discourse, and direct instruction. Teaching presence is important in the online environment for three main reasons: (a) instructors design the educational

experiences for students; (b) instructors facilitate learning by creating a conducive environment; and (c) instructors provide scaffolded learning experiences for students (Anderson et al., 2001). Research on teaching presence illustrates its significance to online teaching (Bedi, 2008; Dunlap et al., 2007; Hughes et al., 2007; Lu & Jeng, 2007; Paz Dennen & Wieland, 2007; Shea et al., 2003).

Of the three presences in online learning—social, cognitive, and teaching—this study focused on teaching presence. The community of inquiry model, including the interrelationships between the three presences, is illustrated in Figure 1.

The community of inquiry model provides a way to examine online teaching and learning that incorporates the seven principles of effective teaching, as outlined by Chickering and Gamson (1987). The community of inquiry model also includes the four essential attributes of teaching and learning outlined by Donovan et al. (2000). Chickering and Gamson's seven principles of effective practice are located in the educational experiences area of the community of inquiry framework (Shea et al., 2003). The overlap of social presence, cognitive presence, and teaching presence is also the overlap of knowledge-centered, learner-centered, and assessment-centered attributes, as outlined by Donovan et al. (Shea et al., 2003) and presented in Figure 2.



*Figure 2.* Community of inquiry model depicting the integration of Chickering and Gameson's (1987) seven principles of good practice, along with Bransford et al.'s three ways people learn. Adapted from "A Follow-up Investigation of Teaching Presence in the SUNY Learning Network," by P. J. Shea, A. M. Pickett, and W. E. Pelz, 2003, *Journal for Asynchronous Learning Networks*, 7(2), p. 78. Used with permission.

The preceding section summarized various ideas and models used to describe teaching and learning. The community of inquiry framework incorporates many key elements found in the literature. The framework also applies to online teaching and learning, unlike many other models, which focus on traditional, face-to-face classrooms. The community of inquiry framework does not focus on only one aspect of online learning, such as design or student outcomes, but examines students' educational experiences—the overlap of cognitive, social, and teaching presences. The community of

inquiry model presents a solid framework that allows for examination of many teaching and learning dimensions.

### **Faculty Development for Teaching**

For today's higher-education institutions, faculty development for teaching includes various activities, events, and programs (Gaff, 1994; Laursen & Rocque, 2009; Walker, Baepler, & Cohen, 2008), with the overall goal of helping teachers improve as educators (Bourne & Moore, 2005). The roots of current faculty development programs can be traced back to the 1960s, when universities were criticized for their lack of attention to teaching (Brawer, 1990). By 1975 there were over 200 faculty development programs focusing on the importance of teaching (Gaff, 1975). Over the past 20 years, much has changed in the field of faculty development. Faculty development has become institutionalized, with budgets, leaders, entire departments, and a host of activities to promote faculty growth (Gaff, 1994).

Hill (2009) contended that the system for professional development for faculty was defective. Past efforts showed participation, but not results. Professional development is big business and often focuses on quantity over quality (Hill, 2009). Webster-Wright (2009) argued that professional development for teachers needed to move "from delivering and evaluating professional development programs to understanding and supporting authentic professional development" (p. 703). Hirsh and Killion (2009) also argued that changes needed to be made in professional development. They outlined eight principles of professional learning that should guide professional development changes into the next era, focusing on principles rather than practices. As Hirsh and Killion stated, teaching contexts vary; however, the principles guiding

decisions remain constant. Hirsh and Killion (2009) also asserted that “principles are the unquestioned beliefs educators hold that shape what they say, think and do” (Hirsh & Killion, p. 465).

Howell, Williams, and Lindsay (2003) reported on 32 trends affecting distance education and found higher education’s current infrastructure inadequate to meet student demand. They also promoted faculty development, support, and training as critical factors of online learning success. Another trend Howell et al. discovered was that education is becoming more decentralized, and more adjuncts are instructing students. Hence, a need exists for adequate pedagogical training. While individuals teaching courses may be content experts, they may lack the pedagogical foundation to teach—especially to teach online classes. De Simone (2006) also noted the tremendous need for preparing faculty to teach online courses, but much of the literature looks at learning, and little emphasis has been placed on the teacher and teaching.

In Barlett and Rappaport’s (2009) longitudinal study, which focused on faculty development at Tufts University and Emory University, the researchers found that it was “the experiences of the faculty development workshops themselves, rather than the particulars of length, content, or delivery that have lasting importance” (Barlett & Rappaport, 2009, p. 80). Faculty’s reflection produced the most long-term impact, a finding similar to what Alteen, Didham, and Stratton (2009) reported—reflection is a key ingredient of effective professional development.

The Instructional Technology Committee’s (ITC’s) recent report of community colleges (Lokken, 2009) stated that 71% of institutions required faculty training prior to teaching online. Therefore, almost 30% of institutions do not require training, leaving

many faculty bereft of such an opportunity. However, some faculty hesitate to teach online or to engage in faculty development programs designed for teaching online. Sherlock (2004) found that fostering faculty relationships with instructional designers improved the rates at which faculty sought professional development activities pertaining to distance education. His study indicated that even though faculty may have access to professional development opportunities, some faculty members are unmotivated to engage in these activities.

Instructional support is needed to ensure the success of professional development activities. Weaver, Robbie, and Borland (2008) identified three important components for a successful online professional development program: institutional support, delivery of the program by online learning experts, and program flexibility and variety. Similarly, Burks, Heidenberg, Leoni, and Ratliff (2009) argued that faculty development programs need to contain three levels: attitude, process, and structure. The first level, attitude, “addresses the goals, values, expectations and beliefs of both the student and educator” (Burks et al., 2009, p. 129). Process examines the faculty member in the classroom and focuses on teaching style and curriculum. Structure represents institutional support of the program (Burks et al., 2009). For successful faculty professional development, the process should be inclusive and meet all participants’ needs.

Dede (2006b) edited a text that presents 10 exemplars of online professional development programs in detail, based on empirical research and according to six criteria: sponsor, audience, content, pedagogy, media, and assessment/evaluation. Similarly, Su, Lin, and Chang (2008) found that computer-based instruction for faculty development produced desired outcomes in terms of learning results, learning contents,

and learning motivations. Su et al.'s findings support that effective professional development can be delivered either online or face-to-face.

The above literature related to faculty professional development provided an overview of changes occurring. Professional development is big business, and many times providers' and consumers' priorities do not align. Regardless of who is either delivering or receiving the professional development, several key factors promote effective professional development. For example, the institution must support professional development initiatives, and these initiatives must meet participants' needs. In the past, faculty professional development was usually provided in face-to-face sessions, but now, Web-based faculty professional development may be equally effective.

### **Evaluation of Faculty/Professional Development Activities**

The final section of the literature review examines professional development evaluation, and the existing literature on that topic constructs a frame that was used during data collection of this study. J. Kirkpatrick (1959) first influenced training development, providing the foundation for modern professional development. Since Kirkpatrick's seminal work, professional development evaluation has taken many directions. The following section reviews relevant research about evaluating professional development, as applicable to faculty professional development.

Working in business and industry, D. Kirkpatrick and Kirkpatrick's (2006) model focused on training company employees, not on faculty professional development. Although these activities differ, their similarities allow their lessons to be cross-applied. The business model used four levels, evaluating reaction, learning, behavior, and results. While business models generally assess individuals, educational professional

development differs in that it is designed to enact change beyond the direct recipient; that is, faculty professional development is often designed to impact students, who are not its direct recipients (Guskey, 2000).

Though the D. Kirkpatrick and Kirkpatrick (D. Kirkpatrick & Kirkpatrick, 2006, 2007; J. Kirkpatrick, 1959) model contains four levels, the model, as Guskey (2000, 2003, 2005a, 2005b, 2007; Guskey & Yoon, 2009) applied it to education, contains five evaluation levels: participant reactions, participant learning, organizational support and change, participants' use of knowledge and skills, and student learning outcomes. Guskey argued that faculty professional development has the ultimate goal of affecting student outcomes; consequently, student outcomes were the last level in the model.

A major difference between Guskey's (2000) and D. Kirkpatrick and Kirkpatrick's (2006) models is that Guskey's framework includes evaluation of the organization's support as critical for a program's success. The organization's support impacts the program's quality, but in terms of evaluating desired outcomes, organizational support and change are not a direct result of the professional development program.

What we generally know about evaluating professional development activities is that most evaluation occurs at what Guskey (2000), D. Kirkpatrick and Kirkpatrick (2006), and others call the first level, participant reactions—that is, most professional development evaluations merely reflect participants' immediate reactions after the event. Guskey (2007) argued that valuable evaluation must have multiple data sources. To effectively evaluate professional development's impact on teaching and learning, more

than participants' reactions needs to be examined. Examination of actual teaching and student learning must also be examined.

Desimone (2008) proposed that, rather than solely examine participation, quality professional development evaluation should assess teacher knowledge, quality of instruction, and student outcomes. Blank and de las Alas (2008b) reviewed and analyzed 25 teacher professional development evaluation programs, and the programs they analyzed went beyond the theoretical constructs presented by Guskey and Yoon (2009), as well as D. Kirkpatrick and Kirkpatrick (2007). The programs in Blank and de las Alas's study measured changes in teacher knowledge, instructional practices, and student outcomes and achievement. Evaluating professional development activities should also involve both summative and formative approaches (Rajeev, Madan, & Jayarajan, 2009) that include both preassessment and postassessment of learning.

Most professional development activity evaluation has focused on face-to-face sessions. Little attention has been paid to evaluating online professional development, and when that has been the case, the program typically focused on "augmenting teachers' existing skills and knowledge in small steps" (Ketelhut, McCloskey, Dede, Brieit, & Whitehouse, 2006, p. 255). Ketelhut et al. (2006) noted that online program development evaluation often clashes with research, because "program evaluation tends to ask questions about effectiveness, while empirical research asks questions about impact" (Ketelhut et al., p. 251). Effective program evaluation centers on three related issues, scalability, sustainability, and cost benefit. In contrast, research focuses on impact, centered on teacher learning, teacher change, and improved student outcomes. The roles of program evaluation and research can complement one another, and both are needed.

As Ketelhut et al. (2006) stated, “Research is particularly important because merely knowing whether and under what conditions a particular model works is of substantially less value than also knowing why” (Ketelhut et al., 2006, p. 253). When evaluating professional development programs, both effectiveness and impact should be examined.

Overall, adequate assessment of professional development program outcomes must look beyond reaction levels, in both traditional, face-to-face and online settings. Although professional development activity evaluation is more common in K–12 than higher education (Blank & de las Alas, 2008a)—and especially for professional development that is provided online (Dede, 2006a)—existing research demonstrates the need for such a process.

### **Chapter Summary**

The literature presented in Chapter 2 presented some issues pertaining to the primary research question investigated in this study: How does an online professional development program in teaching online impact faculty? Along with the primary question, the literature reviewed related to the four subquestions of this study.

The first section of this chapter outlined current trends in online learning. Growth has been the pattern, and online learning appears to be part of the American educational system for the foreseeable future (Allen & Seaman, 2003, 2004, 2005, 2006, 2007, 2008, 2010a; Chari & Haughey, 2006; Lokken, 2009; Moloney, 2006; National Education Association, 2009). The reasons for the growth vary, but many researchers have pointed out that online learning was incorporated into many institutions’ strategic plans, in an effort to reach more students (Allen & Seaman, 2008; Newton & Ellis, 2005; Porter-Wenzlaff & Froman, 2008).

Despite online learning's tremendous growth, many have raised issues about online instruction quality and preparedness of faculty teaching online (Carr, 2000; Clay et al., 2008; Flood, 2002; Frankola, 2001; Steinman, 2007). To illustrate these concerns, some researchers indicate high withdrawal rates and low retention rates of online students (Liaw, 2008; Muilenburg & Berge, 2005; C. Robinson & Hullinger, 2008; Rovai et al., 2007). Other researchers addressed student engagement and persistence in online classes (Bonnel, 2008; Jennings & Bayless, 2003; Steinman, 2007; Tello, 2007).

However, numerous factors can impact student outcomes, such as the online learning implementation process and faculty acceptance of online learning (Clay, 1999; Hunt, 2009; Magnussen, 2008; Phipps & Merisotis, 2000; Schrum & Ohler, 2005; Sloan-C, 2009b). A review of the literature and a meta-analysis on online learning revealed that "on average, students in online learning conditions performed better than those receiving face-to-face instruction" (Means et al., 2009, p. xii). The issue of quality in online teaching continues to be an area of interest and a source of additional research, making online teaching and learning, in general, worthy of investigation.

After exploring current online learning trends, the second section of Chapter 2 reviewed literature about adult learning theory. Starting with Knowles's (1950) foundational work, the literature review progressed to transformational learning theory (Brookfield, 1986; Merriam et al., 2007; Mezirow, 1985). Transformational learning theory builds on Knowles's framework (1980), providing a theoretical base for exploring faculty professional development's impact on teaching attitudes and behaviors.

After the study's theoretical base was established, the third section of the literature review examined online teaching and learning models. Instead of focusing on

teaching itself, the majority of past research focused on either the learner or course development (De Simone, 2006; Palloff & Pratt, 2001, 2005, 2007; Smith, 2005). For example, numerous rubrics exist that measure course quality, such as SREB (2006a) and Quality Matters (MarylandOnline, 2008). Although these rubrics are useful, examining course structure does not equal examining online teaching.

Therefore, the community of inquiry framework (Akyol et al., 2009; Akyol & Garrison, 2008; Arbaugh, 2008; Arbaugh et al., 2008; Garrison, 2007; Garrison et al., 2001; Garrison et al., 2004; Garrison & Vaughan, 2008; Rourke et al., 1999; Rourke et al., 2001a, 2001b) provided an ideal theoretical model for this study. The community of inquiry framework includes Chickering and Gamson's (1987) seven principles of good practice and Donovan et al.'s (2000) design of learning environments. The community of inquiry framework focuses on teaching presence, cognitive presence, and social presence (Garrison, 2007; Garrison et al., 2000) and has many applications to faculty professional development (Akyol et al., 2009; Arbaugh et al., 2008).

The fourth section of the literature review focused on faculty development, beginning with a brief history of faculty development (Gaff, 1975; Laursen & Rocque, 2009; Walker et al., 2008) and a discussion of the increase in and the need for faculty professional development in higher education. The focus then shifted to current problems (Hill, 2009; Hirsh & Killion, 2009) and current trends (Desimone, 2008; Howell et al., 2003) in higher education professional development. Key issues in online professional development revolve around pedagogical preparation (Howell et al., 2003) and participants' reflections on their learning (Alteen et al., 2009; Barlett & Rappaport, 2009). Although Lokken's (2009) study reported that over 70% of institutional

representatives stated that they require faculty preparation to teach online, many faculty resist teaching online. Institutional support of online professional development activities was found to be a key to online professional development program success (Burks et al., 2009; Weaver et al., 2008). And while they are not as prevalent, online professional development programs have been found to be challenging and successful (Ketelhut et al., 2006).

The literature review's final section focused on evaluating professional development activities, grounded in D. Kirkpatrick's (1959) work. Building on that work, Guskey (2000) slightly revised Kirkpatrick's model and applied it to education. To accurately measure professional development effectiveness, such programs should be evaluated on multiple levels. Guskey's work reminds educators that the end result of most faculty professional development is to improve instruction quality. Ketelhut et al. (2006) pointed out that research and evaluation of professional development sometimes clash, and the focus of these efforts might not always be effectiveness.

The above review of literature showed connections among several different areas of research and how these areas relate to the research questions, which focus on faculty development for online teaching in higher education. The foundation provided in Chapter 2 is built upon in Chapter 3, which examines this study's methodology.

### CHAPTER 3 METHODOLOGY

The literature review in Chapter 2 led to the research area and research question: How does an online professional development program in teaching online impact faculty? This study focused on changing attitudes and behaviors of faculty who teach online, particularly what part or aspect of the OPCP most impacted teaching attitudes and behaviors.

Previous research demonstrated faculty professional development's impact on teaching (Blank & de las Alas, 2008a; Hill, 2009; Tienken & Stonaker, 2007); however, that impact may affect some, but not all, of the participants. Although the numbers of faculty participating in professional development activities may be significant, such involvement might not be of practical importance (Hill, 2009; Tienken & Stonaker, 2007), as the number of people impacted may be too small to justify the professional development activity. Previous research about faculty professional development mainly examined face-to-face faculty development opportunities.

More recently, online professional development specifically has been studied, but most published research is theoretical, rather than testing the theoretical constructs. Studies such as Smith's (2005), which listed 51 competencies and discussed how they relate to online instruction, illustrate the theoretical nature of most scholarship about online professional development in higher education. Hiser (2008) discussed the issues she faced at a large community college and the difficulty she encountered trying to

transition faculty to online professional development. Online professional development in higher education is becoming more prominent, and researching these activities' impact contributes to the research related to the field of faculty training and teaching.

### **Research Questions**

The research problem in this study dealt with the impact online professional development programs have on faculty who teach online—that is, whether or not the programs have an impact, and if so, how much. Do online faculty development programs change faculty attitudes and behaviors? Specifically, the primary research question was as follows: How does an online professional development program in teaching online impact faculty? The four subquestions that stemmed from the primary research question were as follows: (a) Does an online professional development program change attitudes about online teaching? (b) What changes in teaching practices, if any, do faculty report after participating in an online professional development program? (c) What are the observed differences in teaching practices, if any, between faculty who have completed an online professional development program and those who have not completed a program? and (d) What part or aspect of an online professional development program do faculty perceive as having the greatest impact in developing or strengthening ideas and behaviors about teaching online?

### **Setting**

The setting of this study was Florida State College at Jacksonville (FSCJ), selected because of the institution's commitment to online education and online professional development. FSCJ represents a strong case to study online teaching and online faculty development. First, the college and its demographic makeup is

representative of large U.S. community colleges (McClenney, 2009). Second, the college has a well-established online faculty development program that shares characteristics with other higher education online faculty development programs (Sloan-C, 2009a; University of Florida Distance Learning, 2009; Zhu, McKnight, & Edwards, 2009). Third, the size of the college allows for a large sample, facilitating the protection of all participants' identities. For these reasons, FSCJ was an ideal setting to conduct this study.

Full-time faculty members had the freedom to construct their own online courses or use courses developed by the college or by textbook publishers. The college employed several instructional design teams, who designed high-enrollment courses. Online adjuncts were provided a college-prepared course, if one existed. If one did not exist, then adjuncts were free to use one from a textbook publisher or construct their own courses. All faculty, adjunct or full-time, were encouraged to modify the courses they were provided, to reflect their personalities, teaching styles, and academic areas of interest.

FSCJ was founded as Florida Junior College (FJC) in 1966, as a result of the 1957 legislation that created Florida's community college system (Wattenbarger & Albertson, 2001). Several years after FJC's inception, the school became Florida Community College at Jacksonville (FCCJ). FCCJ was the seventh-largest U.S. community college, in terms of student enrollment. The college started offering four-year degrees in 2008 and officially became Florida State College at Jacksonville in the fall of 2009. At that time, the college exceeded 80,000 unduplicated enrollments. All of FSCJ's online courses are housed at five main campuses, four physical locations, and one virtual

college. As reported on the college Website, the median student age is 27 years old (Florida State College at Jacksonville, 2009). FSCJ employs 394 full-time faculty members and 1,753 adjunct faculty members, and the college has 2,300 employees. Of the full-time faculty members, 20% have doctorate degrees, 70% have master's degrees, and 10% have bachelor's degrees. FSCJ retains many characteristics of a community college and will continue to do so, as the institution still offers two-year programs, in addition to four-year programs.

### **Online Professional Development Program**

In the present study, the online professional development program studied, known as the Online Professor Certificate Program (OPCP), was initially developed by a consortium of colleges supported by a Fund for the Improvement of Postsecondary Education (FIPSE) grant (Whitten, Chambers, Greene, & Moore, 2002), for the purposes of developing a comprehensive course that centered on creating optimum online learning environments. The program's focus consisted of chapters on learning theory, motivation theory, hybrid/blended learning and teaching, and online learning and teaching. Each chapter in the course became the cornerstone for a module on teaching and learning. The entire program was then provided to staff at four institutions, to use for faculty professional development. The initial program intended to enhance faculty skills to teach in both online and hybrid/blended environments, by providing information on theory and research and modeling appropriate teaching skills for those environments. The four institutions reported that the knowledge presented in and learned from the online and hybrid/blended chapters was significant (Whitten et al., 2006); this feedback prompted FSCJ to develop two certificate programs for online and hybrid/blended teaching. One

program was the adjunct professional development program, which later became the Classroom Professor Certificate Program, and the other program was the Online Professor Certificate Program (OPCP). The OPCP started in 2005, and FSCJ supported the endeavor by providing a monetary incentive for faculty to complete the program.

The OPCP had four main goals. One goal was to facilitate faculty understanding of motivation and learning theory, as it relates to online learning and teaching. Another goal of the program was to improve what faculty know about online teaching, online learning, and assessment strategies effective in the online environment. The OPCP also sought to provide faculty with the skills and tools necessary to modify instruction to improve student learning, student retention, and student performance. A final goal of the OPCP was to create a community of learners dedicated to improving the quality of online teaching through classroom research and collaboration with other faculty members.

As of spring 2010, 365 faculty had registered for the OPCP, and 135 had completed the program. The OPCP consists of four online courses, followed by 18 hours of mentoring—9 hours of being mentored by an online faculty member and 9 hours of mentoring a faculty member enrolled in the program. A complete description of the courses and program is provided in Appendix A. The first course focuses on andragogy, or what some participants refer to as pedagogy, and builds on adult learning principles (Knowles, 1989; Knowles et al., 2005). In that course, five modules provide an overview of online teaching, mastery learning, constructivist learning, cooperative learning, and learning communities.

The second course in the OPCP provides instruction about the learning management system (LMS); FSCJ uses Blackboard®, and faculty receive extensive

training to use the platform to deliver online courses. The Blackboard® course emphasizes concepts from the andragogy course, but also examines communication with students, active learning, student engagement, student motivation, student feedback, interactive discussions, and student collaboration (Florida State College at Jacksonville, 2010).

The third course in the OPCP examines effective use of multimedia and instructs faculty on how to use audiovisual elements in online teaching. Three fundamental skills are covered in the multimedia course: sound editing, image editing, and combining sound and images to create learning objects (Florida State College at Jacksonville, 2010).

In the last course of the series, a capstone course, faculty members learn about various college resources that can assist them in developing and designing online courses. Resources covered include the college's assessment centers, the distance learning office, the library and learning commons, computing services, and the Office of Learning Research and Development (Florida State College at Jacksonville, 2010).

After completing all of the required coursework, faculty engage in online mentoring. Initially, an individual faculty member is mentored by someone who has completed the program, and then the individual faculty member mentors another faculty member enrolled in the program. Typically, mentoring is accomplished via email, although some participants do talk on the telephone. The entire OPCP requires a minimum 45-hour commitment; however, many faculty members report that the process requires more time than the 45 clock hours indicated in the program literature. Faculty generally complete the program in about 18 months.

FSCJ's OPCP contains elements typically seen in similar programs, such as those offered at Sloan-C and at other institutions of higher education (Sloan-C, 2009a; University of Florida Distance Learning, 2009; Zhu et al., 2009). Commonly, programs include such elements as a pedagogical component addressing faculty's unique role in online teaching, a tools class on how to use the online tools or platform, and a technology class on some aspect of technology, such as sound, video, and gaming.

The OPCP was recently added to a 2010 FIPSE grant focusing on displaced workers and online learning. The FSCJ OPCP has been offered to 25 partner institutions participating in the 2010 FIPSE grant (Levine-Brown & Shawver, 2009). Faculty members at each participating institution can complete the OPCP at no cost. The Monterey Institute also showcased FSCJ's OPCP as an exemplar for online faculty professional development (Threkeld, 2006).

The OPCP used in this study is a well-established and well-regarded faculty development program, comparable to many other online professional development programs that include instruction in andragogy, learning management systems, and other topics related to online instruction (Sloan-C, 2009a; University of Florida Distance Learning, 2009; Zhu et al., 2009). The OPCP at FSCJ is not a one-dimensional course, instead incorporating multiple elements of online professional development programs and involving a time commitment beyond that of a single workshop. For the reasons cited above, it was assumed that the OPCP would serve well the purposes for this investigation.

## Research Design

This study's mixed methods research design used both quantitative and qualitative approaches. These methods were employed to triangulate the data and provide a more thorough examination of the problem being investigated. Three different methodologies were employed in this study: a questionnaire, quantitative content analysis, and interviews. Similar to Frey's (2009) study, in which he analyzed the impact of teacher professional development on outcomes for students with disabilities, this study employed mixed methods to better understand the professional development process and its impact on faculty. When researching online teaching, Frey and others (Dunlap et al., 2007; Hughes et al., 2007; Lu & Jeng, 2007; McLoughlin & Mynard, 2009) used discussion boards as one data source.

Asynchronous discussion boards were used in this study, and the content analysis of the data examined differences in actual teaching behaviors. The second data source was a questionnaire developed from the community of inquiry teaching presence student questionnaire, which examined self-reported faculty behaviors, including perceived behavioral changes over time of faculty members who had completed the OPCP. The final data source was interview data collected from 18 participants who had completed the OPCP at the time of the study. The interview data addressed changes in teaching attitudes and the process of how attitudes change. Each data source included different samples from the online faculty population. Table 1 summarizes the study's research questions, research methods and data collected from the method, and faculty population samples in this case study.

Table 1

*Research Questions and Methods*

Question	Method and data	Faculty population sample
Teaching attitudes Does OPCP change attitudes about online teaching?	Interview Answers to questions asked about attitude changes due to OPCP	Completed OPCP 18–24 months prior to study
Teaching practices (reported) What faculty changes, if any, are reported post-OPCP?	Questionnaire Answers to questions from modified teaching presence community of inquiry questionnaire (Garrison, 1999)	Completed OPCP 6–18 months prior to study
	Interview Answers to questions asked about changes in teaching practices resulting from a professional development program	Completed OPCP 18–24 months prior to study
Teaching practices (observed) What, if any, are observed differences in teaching practices between faculty who completed OPCP and those who have not?	Content Analysis Analysis of instructor discussion board posts (Anderson et al., 2001)	Faculty teaching online
Component of change What OPCP part or aspect had the greatest impact on developing or strengthening ideas and behaviors about online teaching?	Interview Answers to interview questions about how OPCP changed teaching attitudes and behaviors	Completed OPCP 18–24 months prior to study

The case study strategy was selected based on the research question of this study.

Yin (2003) argued that the research question is the most important condition for selecting a research strategy. “How” and “why” questions lend themselves to case studies, when a

researcher has no control of the behavioral events. This study asked how an online professional development program impacted online teaching, which is a “how” question. In this study there was no control over who completed the OPCP and who did not. Hence, the best research strategy for this study was the case method.

### **Quantitative Research Methods**

The quantitative methods used in this study consisted of both content analysis and analysis of questionnaire data. The questionnaire measured the perceived changes in respondents’ teaching behaviors. The content analysis focused on actual behaviors and examined faculty’s discussion board posts in their online classes.

**Teaching presence questionnaire.** The purpose of the teaching presence questionnaire was to gather data that measured the perceived teaching presence of faculty members before and after completing the OPCP. Teaching presence consists of instructional design and organization, facilitation, and direct instruction (Garrison et al., 2000). Even though teaching presence is only one part of the community of inquiry framework, teaching presence is the sole part that the faculty member totally controls. Cognitive presence involves information exchange that can transpire without faculty intervention. Cognitive presence is “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (Garrison et al., 2000, p. 4). Constructing meaning can and does happen without faculty involvement. Social presence is defined as “the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people” (Garrison et al.,

2000, p. 4). Like cognitive presence, all participants in the online learning environment create social presence.

The community of inquiry questionnaire (Appendix B) represents a combined tool that measures cognitive, social, and teaching presences (Teaching and Learning Centre, 2007). Garrison et al. (2004) designed the current community of inquiry student questionnaire, which consists of 28 items: 10 measuring social presence, 9 measuring teaching presence, and 9 measuring cognitive presence. The instrument was administered to both experienced online learners and face-to-face learners. For both groups, the reliability coefficients for scores on each factor ranged from 0.90 to 0.95 (Garrison et al., 2004). Swan et al. (2008) presented validity data for the revised survey tool, consisting of 34 items. In their study the researchers used a sample of 287 students, who attended four different institutions. The factor loadings confirmed three distinct factors. Teaching presence loaded most heavily on factor one, and scores on this factor yielded a Cronbach alpha of .94 (Swan et al., 2008).

Shea and Bidjerano (2009) sampled 2,159 online students, from first-year to graduate level, at more than a dozen institutions. Most students (54%) were taking their first online course, and 14% of the students had taken five or more online courses. A factor analysis revealed three strong factors. Cognitive presence, which consisted of 12 items, accounted for 50.63% of the variance, and scores on the factor yielded a Cronbach alpha of .95. Teaching presence, which consisted of 13 items, accounted for an additional 9.3% of the variance, and scores on the factor yielded a Cronbach alpha of .96. The final factor, social presence, consisted of 9 items and accounted for an additional 3.9% of the variance. Scores on this factor yielded a Cronbach alpha of .92. Other

studies using the student questionnaire have found similar factor analysis results (Arbaugh, 2007; Arbaugh et al., 2008; Arbaugh & Hwang, 2006; Boston et al., 2009; Cleveland-Innes et al., 2009).

Although all three factors—cognitive presence, teaching presence, and social presence—are important in the community of inquiry framework, each factor is unique and has been studied independently. Shea et al. (2003) first proposed the teaching presence questionnaire, incorporating Chickering and Gamson's (1987) seven key principles of effective teaching, in addition to Donovan et al.'s (2000) work on how learners learn.

For purposes of the present study, the teaching presence student questionnaire was modified and administered to faculty members instead of to students (Appendix C). Faculty members who had completed the OPCP 6–18 months prior to the study were asked first to answer the survey questions based on their perceptions of their behavior at that time, after completing the OPCP, and then answer the questions a second time, based on their perceptions of their teaching practices before OPCP. A total of 65 faculty participated and completed the teaching presence faculty questionnaire.

In the original questionnaire, the teaching presence factor consisted of 13 questions that asked students how faculty designed and organized the course, how faculty members facilitated the course, and how faculty engaged in direct instruction. The student questions for the teaching presence factor began with the phrase “the instructor.” In the modified questionnaire, the phrase “the instructor” was replaced with “I.” By changing the first two words, the factor's focus shifted from how students perceived teaching presence to how faculty perceived their own teaching presence.

The revised questionnaire was piloted with a group of 142 online faculty members, who did not participate in any other aspect of the study, to ensure that the questionnaire modifications did not significantly alter the three teaching presence subscales, as well as to provide data with sufficient internal consistency reliability. A group of 250 online faculty members was invited to answer the revised questions. The same faculty members were asked to examine the modified community of inquiry student questionnaire and provide feedback on the revised teaching presence questions. Additionally, the revised questionnaire was sent to the key researchers of the community of inquiry framework for input and suggestions.

A factor analysis performed on the pilot group responses found that the 13 items of the teaching presence questionnaire did, in fact, reduce to just one factor, teaching presence. The decision was made to use the three components, or subfactors, of teaching presence because, theoretically and conceptually, teaching presence consists of three subfactors. Previous research has examined all three subfactors, and by using these subfactors in this research, comparisons could be made to past research.

Because this study focused on faculty, assessing faculty attitudes and behaviors superseded student perceptions of faculty. The goal of the modified questionnaire was to assess the impact the OPCP had on perceived teaching behaviors, as measured by the community of inquiry teaching presence questionnaire.

**Teaching presence content analysis.** The second quantitative method used in this study was a content analysis of teaching presence. Several researchers (Cox & Cox, 2008; Gareis & Nussbaum-Beach, 2007; Ikpeze, 2007; Rourke et al., 1999) have used quantitative content analysis to assess online teaching. Content analysis is a method in

which “researchers examine a class of social artifacts, typically written artifacts” (Babbie, 1995). Babbie pointed out that most communication forms lend themselves to content analysis. Although content analysis is often thought of as a qualitative method, Chi (1997) presented a method to quantify qualitative, verbal data. This study employed a similar method of quantifying verbal messages to document teaching presence (Anderson et al., 2001; Shea et al., 2003). The content analysis portion of this study involved comparing discussion board postings of faculty members who completed the OPCP and faculty members who had not completed the OPCP.

Although existing literature provides several approaches for performing content analysis on discussion board posts (Cox & Cox, 2008; Gareis & Nussbaum-Beach, 2007; Ikpeze, 2007; Rourke et al., 1999), the present study focused on the OPCP’s impact on faculty. Many previous studies employed content analysis of student, not faculty, posts. Garrison and associates’ work (Anderson et al., 2001; Garrison et al., 2001; Garrison & Vaughan, 2008; Rourke et al., 1999; Rourke et al., 2001b) focusing on the community of inquiry provided a coding method for faculty discussion board posts.

The content analysis focused on teaching presence, as measured by Anderson et al. (2001). Teaching presence “establishes the curriculum, approaches, and methods; it also moderates, guides, and focuses discourse and tasks” (Garrison & Vaughan, 2008, p. 24). Per Garrison et al.’s (2001) community of inquiry framework, teaching presence involves design, facilitation, and direct instruction. Discussion posts were coded to the category of design, facilitation, and/or direct instruction, or no teaching presence. Because discussion board threads can contain multiple discussion posts, individual discussion posts were the unit of analysis used in this study.

Teaching presence was coded with the preexisting coding scheme that Anderson et al. (2001) and Garrison et al. (2001) developed and used. The three categories of teaching presence—design and organization, facilitation, and direct instruction—were assessed in the content analysis. The coding scheme for design and organization included setting curriculum, designing methods, establishing time parameters, utilizing the medium effectively, and establishing netiquette. These included comments about the course process and content (Anderson et al., 2001; Garrison et al., 2001). Table 2 presents the indicators for design and organization and sample posts reflecting the indicators.

Table 2

*Coding Scheme for Instructional Design and Organization*

Indicator	Example
Setting curriculum	This week we will be discussing [ ]
Designing methods	I am going to divide you into groups, and you will debate [ ]
Establishing time parameters	Please post a message by Friday [ ]
Utilizing medium effectively	Try to address issues that others have raised when you post.
Establishing netiquette	Keep your messages short.

*Note.* Table adapted with permission from D. R. Garrison.

The facilitating discourse coding scheme includes six areas: (a) identifying areas of agreement or disagreement; (b) seeking to reach consensus or understanding; (c) acknowledging and encouraging student contributions; (d) setting the learning climate; (e) drawing in participants or prompting discussion; and (e) assessing process efficacy. These measures assessed faculty ability to stimulate discussion progress. Table 3

presents the indicators for facilitating discourse and sample posts reflecting the indicators.

Table 3

*Coding Scheme for Facilitating Discourse*

Indicator	Example
Identifying areas of agreement or disagreement	Joe, Mary has provided a compelling counter example to your hypothesis. Would you care to respond?
Seeking to reach consensus or understanding	I think Joe and Mary are saying essentially the same thing.
Acknowledging and encouraging student contributions	Thank you for your insightful comments.
Setting learning climate	Don't feel self-conscious about "thinking out loud" on the forum. This is a place to try out ideas, after all.
Drawing in participants or prompting discussion	Any thoughts on this issue? or Anyone care to comment?
Assessing process efficacy	I think we're getting a little off track here.

*Note.* Table adapted with permission from D. R. Garrison.

The third category of teaching presence is direct instruction (Anderson et al., 2001; Garrison et al., 2001). The coding scheme for direct instruction includes seven indicators: (a) presenting questions; (b) focusing the discussion on specific issues; (c) summarizing the discussion; (d) confirming understanding; (e) diagnosing misconceptions; (f) injecting knowledge from diverse sources; and (g) responding to technical issues (Anderson et al., 2001; Garrison et al., 2001). Table 4 presents the indicators for direct instruction and sample posts reflecting the indicators.

Table 4

*Coding Scheme for Direct Instruction*

Indicator	Example
Presenting questions	Bates says [ ]. What do you think?
Focusing discussion on specific issues	I think that's a dead end. I would ask you to consider [ ]
Summarizing discussion	The original question was [ ]. Joe said, [ ]. Mary said, [ ]. We concluded [ ]. We still haven't addressed [ ].
Confirming understanding through assessment and explanatory feedback	You're close, but you didn't account for [ ]. This is important because [ ].
Diagnosing misconceptions	Remember, Bates is speaking from an administrative perspective, so be careful when you say [ ].
Injecting knowledge from diverse sources	I was at a conference with Bates once, and he said, [ ]. You can find the proceedings from the conference at <a href="http://www....">http://www....</a>
Responding to technical concerns	If you want to include a hyperlink in your message, you have to [ ].

*Note.* Table adapted with permission from D. R. Garrison.

Faculty discussion posts were coded into the three general categories (design and organization, facilitation, and direct instruction), and some posts could be classified in multiple categories. Anderson et al.'s (2001) original coding scheme served a twofold purpose. First, each post was coded into one of the three teaching presence subcategories. Second, each post was coded according to all the multiple teaching presence subcategories. To simplify Anderson et al.'s twofold coding process and retain the original study's data precision, discussion posts were initially coded into one of the eight categories, as presented in Table 5 (also see Appendix D), and then collapsed as needed for data analysis. The revised coding scheme provided the same information as

the original coding scheme but added information that allowed for additional data analysis.

Table 5

*Overall Coding Scheme*

Code value	Teaching presence factor	No. categories
1	Instructional design	1
2	Facilitating discourse	1
3	Direct instruction	1
4	Instructional design and facilitating discourse	2
5	Instructional design and direct instruction	2
6	Facilitating discourse and direct instruction	2
7	Instructional design, facilitating discourse, and direct instruction	3
8	No factors	0

The coding scheme used in this study facilitated a more detailed analysis than other reports (Anderson et al., 2001; Garrison et al., 2004; Garrison et al., 2006). The coding scheme permitted the reporting of percentages for each teaching presence factor to total posts, which were then computed and compared across the two populations—i.e., faculty who completed the OPCP and faculty who had not. That strategy also allowed for comparing the number of multiple teaching presence factors (e.g., number 5: design and facilitation) to total posts, computed and compared across the two populations. The results were reported in a similar way to previous researchers' methods (Anderson et al., 2001; Garrison et al., 2004; Garrison et al., 2006), but the revised coding scheme permitted additional comparisons.

Researchers have debated how best to select posts for coding. For example, Heckman and Annabi (2005) used the first two weeks of the term as a representative sample of the entire term. L. Robinson, Reeves, Murphy, and Hogg (2010) used the first six weeks of the term as a representative sample of the entire term. Cox and Cox (2008)

selected two of the 10 weeks as representative samples. These research studies selected representative time frames, rather than coding the discussion board posts from the whole term. Cleveland-Innes et al. (2009) reported that early research using the community of inquiry framework to analyze discussion board posts did not use posts from entire terms. Instead, selected weeks were examined, with few differences found between the selected time frames.

In the present study, 50 classes were coded using the community of inquiry framework. Twenty-five classes were randomly selected, using a table of random numbers, from faculty members who completed the OPCP and were willing to participate in the study. Twenty-five additional classes were randomly selected, using a table of random numbers, from online faculty members who had not enrolled in the OPCP and were willing to participate in the study. A stratified, random sample was drawn from participating social and behavioral science faculty, so equivalent comparisons could be made between the samples. One-third of the sampled classes were taught by faculty who had 0–5 years of collegiate teaching experience at the time of the study. One-third of the sampled classes represented faculty with 6–10 years of collegiate teaching experience at the time of the study, and one-third of the sampled classes represented faculty with 11 or more years of collegiate teaching experience at the time of the study.

I conducted the initial coding, then hired and trained two assistants in Anderson et al.'s (2001) and Garrison et al.'s (2001) quantitative content analysis method. I corresponded with several authors of these studies and followed the same training procedures. The procedures consisted of three sessions that each lasted approximately two hours. Session one focused on the construct's meanings, and the assistants practiced

coding several discussions posts that fit into one indicator category. Session two involved hands-on experience, and the assistants encoded single-coded posts and then discussed both the posts and the coding. The third and final session included more hands-on practice with coding discussion board posts, which included both single and multiple indicator posts. These procedures were followed to ensure coding consistency. Additionally, measures of reliability were calculated to ensure intrarater and interrater consistency.

Intercoder reliability is critical in content analysis; therefore, two raters coded faculty discussion board posts. Many measures of intercoder reliability exist, such as Holsti's coefficient of reliability, Scott's pi, Cohen's kappa, and Krippendorff's alpha (Lombard, Snyder-Duch, & Bracken, 2002). The simplest measure of interrater reliability is the percentage of agreement (McDonald & Loch, 2008), which was used in this study. An interrater reliability of .80 or greater is acceptable for most studies (Lombard et al., 2002). In studies using the community of inquiry framework and the quantitative content analysis, levels of interrater reliability ranged from .83 to .96 (Anderson et al., 2001; Garrison et al., 2001; Shea et al., 2010). Based on past levels, a level of .85 or higher was deemed acceptable for this study.

A quantitative content analysis was employed to compare the teaching presence of faculty members who had completed the OPCP at the time of the study and faculty who had not completed the OPCP. The intent was to infer the OPCP's impact on faculty's teaching presence, according to actual online teaching.

## **Qualitative Research Methods**

The qualitative part of this study involved interviews with individuals who completed the OPCP between August 2008 and May 2009. That qualifier was adopted so participants would remember the professional development experience but would also have had enough time to implement ideological changes resulting from the OPCP. Some teaching changes that result from professional development programs may not be immediate; faculty need time to adapt new ideas to their teaching practices, which may take several semesters or longer (Barlett & Rappaport, 2009; Laursen & Rocque, 2009; McGowan & Graham, 2009). Interviewing people two years or more removed from the OPCP might prohibit participants from remembering the entire program, as the program takes an average of 18 months to complete. The decision was made to include participants who had completed the OPCP at least 18 month prior to the study, but who were not more than two years removed from completing the OPCP. If more than two years had passed since OPCP completion, individuals were thought to be too far removed to remember the impact of the program on attitudes or behaviors.

The interviews served two distinct purposes in this study. The interviews were designed to help assess some of the specific research questions posed (Appendix E), and the question about changes in attitudes because of the OPCP is only assessed with the interviews. The interviews were intended to help answer specific questions about reported changes in teaching practices. Participants were asked about their changes in teaching practices and how—if at all—the OPCP fostered these changes. A second research question the interviews facilitated was identifying what part of the OPCP had the greatest impact on developing or strengthening faculty teaching ideas and teaching

practices. The interviews also served for a more open exploration of the OPCP, through examining interview data categories and themes.

The first part of the qualitative data analysis focused on participants' perceptions regarding answers to the specific research questions. The second part of the qualitative data analysis focused on generating categories and themes from the interview data. Marshall and Rossman (2006) described the process as identifying salient, meaningful categories that the participants expressed. Participant answers to interview questions were examined to seek recurring ideas or language participants shared. Patton (2002) termed the process *inductive analysis*, which “involves discovering patterns, themes, and categories in one’s data” (Patton, 2002, p. 453). The key is discovery—patterns and themes are constructed through data analysis, rather than being predetermined, as in deductive analysis. The purpose of the interviews was to provide a deeper understanding of the OPCP’s impact on faculty teaching attitudes and behaviors.

### **Ethical Issues**

The most salient ethical issue in this study involved the participants’ identities and information associated with the participants. Institutional review board (IRB) approval was applied for, and was granted for this study at both the degree-granting institution (Appendix F) and the institution where the research took place (Appendix G). Because this study compared teaching practices and teaching outcomes, some may perceive the nature of the information as sensitive. The data collection process involved three distinct phases, and each phase was individually managed.

From an ethical perspective the questionnaire data collection process was the least risky, as the electronic survey tool collected no identifying information. When

constructing and administering the questionnaire, no names or Internet protocol (IP) addresses were collected. Additionally, the questionnaires did not contain any information that could specifically identify participants. After the questionnaires were completed, the data were imported into the IBM® Statistical Package for the Social Sciences (SPSS®), and the original online survey was deleted to ensure information confidentiality. The SPSS® data set was stored on a secure, Web-based disk drive at the University of North Florida (UNF). The secure Web space had many layers of protection, including those against hacking and loss or theft of personal computers.

The interview data were not anonymous, but all information was kept confidential. Participants were assured of confidentiality both before and after the interview sessions and were asked not to state any information that might uniquely identify them. To further ensure confidentiality, all interviewees' names were changed. All interviews were audio recorded, and after the transcriptions were completed, they were stored on secure Web space at UNF. The original recordings were destroyed. The code lists, which included participants' real names, pseudonyms, and corresponding transcript numbers, were kept in a locked file cabinet in a secure college office at a different location. After the interviews were transcribed, all identifying comments and names were changed in the actual transcripts, to protect identities of both participants and any individuals mentioned in the interviews.

I, along with two trained assistants, coded the quantitative content analysis data. Prior to their involvement in the study, the assistants signed agreements stating that all of the information to which they had access would be kept confidential. The content analysis involved transcriptions and a code sheet. All identifiers were removed from the

transcriptions and transcribed data, as well as all SPSS® data sets or other data sets. All data sets and transcriptions were stored on secure Web space at UNF. The code sheet, which included participants' real names, a pseudonym, and their corresponding transcript number, was stored with other codes sheets for this project in a locked file cabinet in a secure college office at a different location. Upon completion of the study, all data and code lists were digitized and will be kept for five years after completion of the study, on secure Web space provided by FSCJ.

Although much of the information collected in this study was not of a sensitive nature, some of the information might have been considered sensitive. For that reason, security procedures were maintained to ensure participant protection.

### **Limitations of the Study**

In the following section, some of the study's limitations are discussed. Several of the limitations concern the generalization of findings. Additionally, there were limitations regarding inferences made about how professional development changes faculty attitudes and behaviors. In spite of these limitations, the study also presented several benefits.

One limitation pertains to the ability to generalize the study's findings to other populations. The issue of generalization is a potential problem in any educational research project (Anderson & Ellourmi, 2004; Babbie, 1995; National Education Association, 2009; Teaching and Learning Centre, 2007), and this study was no exception. FSCJ was selected as a study site for many reasons. The study employed a large enough sample to protect participants' identities, the OPCP has an established history, and the large numbers of participants allow for adequate hypotheses testing.

However, the same characteristics that make FSCJ an ideal site for the study also limit the study. Generalizing to other institutions could be difficult, as these institutions' histories could greatly differ from FSCJ's. Also, generalizing to smaller institutions might be problematic, as they might have different structures and dynamics than those at FSCJ.

Although it has been argued that FSCJ represents a traditional college, the results of this study may only be generalized to comparable institutions. For example, although the college is technically a four-year college as of fall 2009, its mission remained that of a community college. Under these circumstances, generalizing to four-year colleges may not be feasible. Therefore, the results of the data analysis should be carefully examined before being applied to settings other than community colleges.

Another limitation concerns faculty's knowledge and skills prior to employment with FSCJ, as entering faculty's knowledge and skill levels vary. This study did not attempt to measure participants' skills and knowledge prior to completing the OPCP. Arguably, faculty who engage in professional development opportunities might already possess more knowledge and skills, which could attract them to involvement in professional development opportunities. An additional survey may have been able to control for previous knowledge.

The method of assessing attitudinal change in this study could present an additional limitation. In this study, perceptions of change were observed, rather than actual behavioral changes. Actual behavioral changes due to the OPCP were not measured, but the changes were inferred. Changes can only be inferred when data are collected at a single point in time. One way to assess changes over time would be to

conduct a longitudinal study. Even though longitudinal data may seem more appropriate for assessing attitudinal change, the connection between attitudinal changes and the OPCP remains problematic. Other factors, such as other professional development and professional growth due to maturation, cannot be controlled, which also would make longitudinal data problematic.

Overall, these limitations do not diminish the study's benefits and contributions. Additional research is needed in many areas concerning online faculty professional development and online teaching, and the present study expands the literature in many ways. Although many authors have argued that the community of inquiry framework can and should be applied to faculty development (Garrison, 2007; Whipp & Lorentz, 2009), no studies have focused exclusively on professional development's impact on the community of inquiry. This study focused on professional development's impact on the community of inquiry and hence enhanced the community of inquiry knowledge base. The present study also connected several bodies of research and demonstrated the interconnectedness of different inquiry fields, such as adult learning theory, professional development, and professional development evaluation.

### **Chapter Summary**

Chapter 3 focused on the methodology used in this study, which employed various techniques to address the primary research question: How does an online professional development program in teaching online impact faculty? FSCJ, the setting for this study, was a large community college that recently transitioned to a four-year college. Even so, the institution retained many characteristics of a community college, and its mission had not changed. The second section of Chapter 3 examined the OPCP.

The OPCP has had over 325 participants and was the faculty professional development program investigated in this study. The OPCP is similar to online professional development programs found at other institutions.

The next section in Chapter 3 focused on research methods. In this study, both quantitative and qualitative methods were used with the community of inquiry framework. A quantitative content analysis was performed to assess the teaching presence of those who had completed the OPCP, compared to those who had not participated in the OPCP. A questionnaire was administered to determine whether or not the OPCP impacted reported teaching practices. The final method used in this study was to interview 18 faculty members who had completed the OPCP at the time of this study. The interview was designed to collect data that could not have been obtained as easily with quantitative methods. The three methods were used to triangulate the data sources and produce a more complete picture of the OPCP's impact on teaching.

## CHAPTER 4 DATA ANALYSIS AND RESULTS

In this study, a mixed methods approach was used. The quantitative data consist of responses to a questionnaire and a quantitative content analysis. The qualitative data were collected through open-ended interview questions that asked participants about their experiences in completing the online professor certificate program (OPCP). A review of the data and data sets and examination of the results from the data sets follows, along with the analysis of those data.

### **Review of the Data and Data Sets**

The larger context of this study is Florida State College at Jacksonville (FSCJ). All of the participants had teaching responsibilities at the college prior to the study. At the time of the study, FSCJ had 394 full-time faculty members and employed 1,753 adjunct faculty annually. Nearly 90% of the college's adjunct faculty live in a tri-county area; however, some are out of state or even outside the United States. FSCJ is a new state college in Florida and offers many associate, workforce, and bachelor degree programs, as well as education for residents of the surrounding community.

The three primary data sets constructed for and used in this study required different data collection techniques. The first data set collected was modeled from the pilot study on teaching presence, discussed in Chapter 3. Faculty were asked to respond to a posttest and a retrospective pretest consisting of the 13 questions that construct teaching presence. Another data set collected consisted of the coded discussion postings

of faculty who had completed the OPCP and coded discussion posts of faculty who had not completed the OPCP. Using the method of Garrison et al. (2000), instructor discussion posts were categorized by teaching presence type: design and organization, direct instruction, and facilitation. The total number of posts was recorded in each of the categories for comparison, to observe whether or not OPCP participation changed posting behavior. For the final data set, faculty members who had completed the OPCP were interviewed regarding their thoughts and perceptions about their participation and the OPCP's impact on their teaching. Open-ended questions were asked regarding beliefs and practices surrounding teaching and professional development. Combined, these three data sets were used to address the research questions. Triangulation of data collection was used in the present study to understand how online faculty development impacts online teaching.

The following sections will examine the individual data sets, providing each data set's purpose, collection method, and descriptive statistics. Each section will conclude with the analysis of the data in that set. The first data set presented consists of the questionnaire data, which will be followed by a presentation of the quantitative content analysis. The final section focuses on the interview data set.

### **Teaching Presence Questionnaire Data Set**

This section examines the data collection and the findings for information collected from the teaching presence questionnaire. The questionnaire focused on teaching presence (Garrison et al., 2000) from the community of inquiry framework.

## **Purpose**

The purpose of the questionnaire data was twofold. First, the data set was used to explore teaching presence and the subscales that construct teaching presence. To date, the teaching presence questionnaire has only been used with students, to determine teaching presence scores for faculty. The instrument was modified so that faculty could evaluate themselves. Factor analysis was used to examine the factor structure of the modified instrument.

The second purpose in collecting this information was to discern any perceived differences in teaching presence before and after the OPCP, as reported by participants. Retrospective pretest and posttest data were collected for comparison.

## **Data Collection Method**

A total of 147 people who completed the OPCP were sent an email, asking them to participate in the project. Several of the messages were returned as unsent due to invalid email addresses, because some of the adjuncts were no longer teaching at FSCJ. A total of 103 emails were successfully sent, inviting participants to complete an online survey within two weeks. The first email resulted in 54 participants. A second reminder email was sent, inviting participants to complete the survey within the next week; 6 additional people responded. A third and final email reminder was sent, inviting people to complete the survey within the next week. The final email notice resulted in 3 additional respondents. A total of 63 participants completed all of the teaching presence questions on the questionnaire.

A response bias that masks program effectiveness may exist when asking about behaviors in the past compared to the present (Howard, 1980). Because response bias is

possible, researchers have recommended the use of retrospective pretests, and asking participants about their present perceptions prior to asking about the past (Devraj, Butler, Gupchup, & Poirier, 2010; Kiersma, Darbishire, Plake, Oswald, & Walters, 2009). Therefore, in this study, participants were asked first about their current attitudes and behaviors and then asked about their attitudes and behaviors prior to completing the OPCP.

The questionnaire was anonymous and did not ask any identifying information. The survey was constructed in Zoomerang™, a commercial survey tool, which offered a secure connection for the participant to complete the survey and did not record the IP address of the computer from which the survey was completed.

### **Sample Description**

The following section will describe the sample for this data set. A total of 63 participants completed all of the items on the questionnaire. The breakdown of participants teaching in different subject areas, from highest to lowest percentage, was as follows: social sciences (25.0%), natural sciences (24.3%), humanities (18.8%), mathematics (18.8%), communications (8.4%), and workforce programs (4.7%). Faculty members were asked how long they had been teaching and how long they had been teaching online. No faculty in this sample had been teaching less than three years. Those teaching 3–5 years represented 7.8% of the sample, and another 62.5% of the sample had been teaching 6–10 years. Those with 11+ years of teaching comprised 29.7% of the sample. In this sample, no one had 11+ years of online teaching experience. Almost half (48.4%), however, had been teaching online for 6–10 years. Those with 3–5 years teaching online represented 35.9% of the sample, and those with less than three years of

experience represented 15.7% of the sample. In this sample, 28.1% held doctoral degrees, and the remaining faculty (71.9%) held master's degrees.

### Descriptive Statistics

Based on the 63 completed questionnaires, Table 6 presents the means and standard deviations for all of the teaching presence variables. The first column presents the teaching presence items and subscale identifications. The next columns present the means and standard deviations of the responses to the teaching presence questions for the retrospective pretest, responses based on participants' reflections on their attitudes and behaviors prior to completing the OPCP. The final set of columns presents the means and standard deviations for responses to the teaching presence questions after participation in the OPCP. The response format used a Likert-type scale, where 1 represented *strongly disagree* and 5 represented *strongly agree* with the statement.

Table 6

#### *Descriptive Statistics for Teaching Presence Questions (n = 63)*

Variable	Pre-Training		Post-Training	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
I clearly communicate important course topics. (Design & Organization #1)	4.23	0.90	4.36	1.07
I clearly communicate important course goals. (Design & Organization #2)	4.12	0.95	4.36	1.00
I provide clear instructions on how to participate in course learning activities. (Design & Organization #3)	4.05	0.90	4.33	1.10
I clearly communicate important due dates for learning activities. (Design & Organization #4)	4.27	0.88	4.47	1.13
I am helpful in identifying areas of agreement and disagreement on course topics. (Facilitation #1)	3.73	0.85	3.69	1.19
I am helpful in guiding the class towards understanding course topics. (Facilitation #2)	3.95	0.81	4.09	1.17
I help to keep course participants engaged and participating in productive dialogue. (Facilitation #3)	3.77	0.99	4.05	1.06

*(Table 6 continues)*

Table 6 (*continued*)

Variable	Pre-Training		Post-Training	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
I help keep the course participants on task in a way that helps students to learn. (Facilitation #4)	3.92	0.97	3.92	1.16
I encourage course participants to explore new concepts in this course. (Facilitation #5)	3.94	0.97	4.14	1.17
I reinforce the development of a sense of community among course participants. (Facilitation #6)	3.69	1.09	4.06	1.14
I focus discussion on relevant issues in a way that helps students to learn. (Direct Instruction #1)	3.90	1.06	4.19	1.05
I provide feedback that helps students understand their strengths and weaknesses. (Direct Instruction #2)	4.12	0.93	4.14	1.15
I provide feedback in a timely fashion. (Direct Instruction #3)	4.34	1.00	4.38	1.13

The descriptive statistics indicate that in all but two cases, agreement increased from the pretest condition to the posttest condition. Facilitation #4 did not change from pre-training to post-training. The only variable that decreased from the pretest to the posttest response was the first facilitation item, regarding how helpful the instructor was in identifying areas of agreement and disagreement on course topics.

### **Data Analysis**

Two primary types of data analysis were used with the questionnaire data set. The first data analysis procedure was factor analysis. Due to the investigative nature of this study, an exploratory factor analysis was selected. The purpose of the exploratory factor analysis was to examine whether or not the revised teaching presence factor, as measured by the revised teaching presence questionnaire, was maintained with this new population, faculty. That is, when the questionnaire was slightly altered and given to a different population such, as faculty, did the measure still have meaning, and did the measure conform to what has been previously found? The other analysis technique used

with this data set was a paired *t*-test, to test for differences between the retrospective pretest and posttest responses.

The first data analysis technique used with this data set is an overall exploratory factor analysis on the teaching presence factor for the new population, faculty members, in contrast to students. The 13-item teaching practice questionnaire was adapted from the community of inquiry questionnaire. The adapted questionnaire focused on faculty members answering questions about their behaviors, rather than students rating faculty members' behaviors. The teaching presence factor is hypothesized to be a viable construct consisting of all 13 individual items, comparable to student responses regarding faculty behaviors (Arbaugh et al., 2008; Garrison et al., 2004). Because the tool had been revised slightly and was applied to a new population, it was necessary to confirm that these 13 items reduced to one factor.

Many recommended that the sample size for factor analysis should be at least 100 participants, or three to five times the number of variables (MacCallum, Widaman, Zhang, & Hong, 1999), but many factors influence the number of participants needed for a factor analysis. Many statisticians recommend having 3 to 20 times the number of variables used as the minimum sample size. A larger sample size would yield more stable factors, but because this study was exploratory in nature, a smaller sample size sufficed for comparative purposes. An exploratory factor analysis was performed on the overall teaching presence factor.

Results of the exploratory factor analysis for the posttest questionnaire data are presented in Table 7. Only the first component had an eigenvalue over 1.0, indicating a

one-factor solution. The factor loadings are presented in Table 7, with the variance explained for each item and the overall Cronbach's alpha.

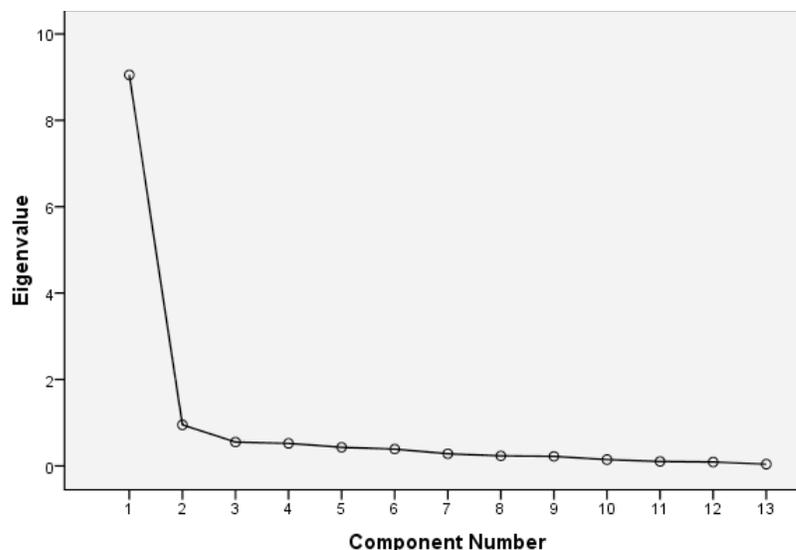
Table 7

*Exploratory Principal Component Eigenvalues and One-Factor Solutions for Teaching Presence*

Component	Eigenvalue	% of Variance Explained	Cumulative % of Variance Explained	Factor Loadings
1	9.053	69.64	69.64	.88
2	.950	7.31	76.95	.81
3	.551	4.24	81.18	.75
4	.520	4.00	85.18	.80
5	.430	3.31	88.49	.39
6	.388	2.99	91.48	.68
7	.280	2.16	93.64	.72
8	.232	1.78	95.42	.58
9	.220	1.69	97.11	.60
10	.145	1.11	98.23	.56
11	.103	.79	99.01	.78
12	.088	.68	99.69	.75
13	.040	.31	100.00	.76

*Note.* Extraction Method: Principal Component Analysis. Cronbach's alpha = .962

Examination of the variance explained by the eigenvalues is one way to determine the number of teaching presence factors. Another way to determine the number of factors is by visually examining the scree plot in Figure 3. Scree plots allow a researcher to visually inspect data, to determine if additional factors add to the total variance explained. By examining the scree plot, a one-factor solution appears to be the best fit. The scree plot shows a possible second factor, but that factor adds little in explained variance. When examining the eigenvalues and the scree plot, the factor analysis supports the assumption that all 13 items constitute one construct, called teaching presence.



*Figure 3.* Scree plot for teaching presence factor.

Teaching presence is proposed to consist of three subscales or factors measuring design and organization, facilitation, and direct instruction (Garrison et al., 2000). However, some researchers have found only two factors (Arbaugh et al., 2008; Shea, Li, Swan, & Pickett, 2005) consisting of design and organization for one factor and facilitation and instruction for the second factor—stated another way, how the course is designed versus what teachers do in the class. Other researchers have found support for the three distinct factors (Arbaugh & Hwang, 2006; Diaz, Swan, Ice, & Kupczynski, 2010), as Garrison et al. (2000) proposed. Each subscale or factor was “computed as the product of the course ratings and item-importance ratings” (Diaz et al., p. 24). The sum of individual item scores for each subscale or factor created factor scores. The data in the present study did not support the notion of three distinct teaching presence factors. Table 8 presents descriptive statistics and the correlations among the three computed teaching presence factors.

Table 8

*Descriptive Statistics and Correlations of Subfactors*

Measure	Design	Facilitation	Direct Instruction	<i>M</i>	<i>SD</i>	Coefficient Alpha
Design (4 items)	1.00	.84*	.91*	4.38	1.01	.95
Facilitation (6 items)		1.00	.85*	4.00	.92	.89
Direct Instruction (3 items)			1.00	4.23	1.08	.90

*Note.*  $p < .01$ ;  $n=64$

The high correlations among the three teaching presence factors in this study indicate that the items overlap, and the items do not measure distinct constructs. In this study, as in the studies by Gorsky and Blau (2009) and Nagel and Kotzé (2010), the decision was made to use the original three categories of teaching presence, as Garrison et al. (2000) defined them in the theoretical model. The decision was made to use the three teaching presence subfactors because, theoretically, they are distinct constructs. Additionally, previous research on teaching presence in the community of inquiry framework has treated the three constructs individually. The individual treatment of these items will allow for this research to be compared to previous research on teaching presence from the community of inquiry framework. However, results should be interpreted cautiously considering the factor analytic results did not support three discrete factors.

Nagel and Kotzé (2010) simply reported the average item score for each of the three subcategories, by averaging out the responses for the answers to the questions in each of the three categories. Table 9 presents the results of applying Nagel and Kotzé's comparative method to the present study. The means, standard deviation, and the ranking of each item is presented.

Table 9

*Comparison of Mean Score for Teaching Presence Subscales with Rankings*

Teaching Presence Subscale	Nagel and Kotzé (2010)			Current Data Set		
	<i>M</i>	<i>SD</i>	(Ranking)	<i>M</i>	<i>SD</i>	(Ranking)
Design & Organization	4.67	.54	(1)	4.38	1.01	(1)
Facilitation	4.09	.85	(3)	3.99	.92	(3)
Direct Instruction	4.16	.88	(2)	4.23	1.10	(2)

As in the case with students in the Nagel and Kotzé (2010) study, design and organization was the area with the highest agreement of the three teaching presence subscales. Direct instruction followed, with facilitation having the lowest mean among the three teaching presence subscales. The magnitude of the means slightly differs in the Nagel and Koetzé study and the present study; however, the subscales' relative order is the same. This similar pattern is another indication that the adapted teaching presence scale is a meaningful measurement tool that resembles the teaching presence survey constructed for students.

In addition to performing the exploratory factor analysis, the questionnaire data set was used to test the hypothesis that teaching presence differed before and after participation in the OPCP, based on participants' self-reported attitudes and behaviors on the revised teaching presence questionnaire. A paired sample *t*-test was performed on each teaching presence scale, to compare pre-training and post-training teaching presence scores. Averages were computed for each of the three scales, as well as an overall average for the entire instrument. A statistically significant difference ( $p < .05$ ) did not exist in the retrospective pre-training teaching presence factor total score ( $M = 4.01$ ,  $SD = .80$ ), as compared to the post-training teaching presence total score ( $M = 4.17$ ,  $SD = .90$ );  $t(63) = -1.29$ ,  $p = 0.20$ .

Additional *t*-tests were conducted on each of the three teaching presence subcategories: design and organization, facilitation, and direct instruction. The paired sample *t*-test for the three subscales is presented in Table 10.

Table 10

*Teaching Presence Subscale Paired t-Test Results*

Subscale	Pretest		Posttest		<i>t</i> (63)	<i>p</i> (1-tailed)	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Design and Organization	4.17	.84	4.37	1.01	-1.71	.04	.21
Facilitation	3.79	.79	3.96	.94	-1.27	.11	.20
Direct Instruction	4.13	.86	4.24	1.02	-0.85	.20	.12

The differences between the means of the pre- and post-training scores were statistically significant ( $p < .05$ ) only for design and organization; however, the effect size was small. No statistical differences were found for facilitation or direct instruction. Faculty members reported that they had more design and organization teaching presence after completing the OPCP, compared to before the OPCP. This finding was expected, as the program emphasizes helping participants navigate online courses through design and organization. The transformational learning theory presented in Chapter 2 provides a theoretical explanation of how the professional development program could impact faculty. In some cases, the OPCP could have influenced faculty in changing teaching practices and behaviors.

Although there is no statistically significant difference for the facilitation and direct instruction factors, individual items that constitute the factors have an interesting pattern of difference for the pre- and post-training. Examination of the individual items that construct the subcategories indicates that some items have larger differences than others, and most item means are higher for post-training scores than pre-training scores.

Table 11 presents the differences between the pretest and posttest scores, from highest difference to lowest difference.

Table 11

*Difference of Means for Individual Teaching Presence Items, from High to Low (n = 63)*

Variable	Pre/Post Difference
Facilitation #6	0.37
Direct Instruction #1	0.29
Design & Organization #3	0.28
Facilitation #3	0.28
Design & Organization #2	0.24
Design & Organization #4	0.20
Facilitation #5	0.18
Facilitation #2	0.14
Design & Organization #1	0.13
Direct Instruction #3	0.04
Direct Instruction #2	0.02
Facilitation #4	0.00
Facilitation #1	-0.04

As can be seen in Table 11, the differences between the pretest and posttest scores for several of the individual indicators are of similar magnitude. Four particular items stand out because the differences were greater than one quarter of a point (i.e., more than 0.25). These four items are design and organization #3, facilitation #3, facilitation #6, and direct instruction #1. These items are in different subcategories of the teaching presence construct, but these items do suggest a common thread that ties them together: they all focus on group interactions. For the design and organization questions, respondents rated their clarity of communication of important dates and time frames. For the facilitation items, the respondents rated their ability to focus on keeping course participants engaged and participating in productive dialogue and reinforcing the sense of community among participants. The fourth item was the direct instruction item.

Respondents were asked to rate whether or not they helped focus the discussion on relevant issues, to facilitate student learning. Although comparison of the pretest and posttest means does not show any statistically significant changes, an examination of the individual item differences, as demonstrated in Table 11, sheds some light on how a professional development program impacts participants.

### **Summary**

The results from the questionnaire data set add support for one teaching presence factor, as measured by the revised teaching presence survey for faculty. The revised teaching presence questionnaire for faculty does yield consistent results with the student questionnaire on teaching presence. The new teaching presence questionnaire has several implications for future research.

The other result from this data set concerns the difference in faculty perceptions between the pre- and post-training. The only statistically significant difference found was in design and organization. Statistically significant differences were not found to exist in overall teaching presence between the pre-training and post-training questions in the areas of facilitation or direct instruction, although transformational learning theory suggested that significant findings would be found in all categories across the pre- and post-training. Although no statistically significant differences were found, an examination of the mean differences of the individual teaching presence items showed four items with larger differences, which seem to focus or cluster around an interaction theme.

### **Quantitative Content Analysis Data Set**

The second data set consists of a content analysis of instructor discussion board postings from 50 different online classes. Half of the coded courses were taught by individuals who had completed the OPCP, and the other half were taught by instructors who were not enrolled in the OPCP. The coding was conducted according to the community of inquiry coding scheme devised by Garrison et al. (2001). The coding consists of examining instructors' discussion board postings and categorizing the posts as having attributes associated with design and delivery, facilitation, and direct instruction or any combination of the three. I personally trained two raters in the coding scheme used in the community of inquiry framework, and the two raters and I coded all of the posts. The posts were then examined to look for differences between the posts of those who had completed the OPCP compared to those who had not.

#### **Purpose**

The primary purpose of this data set was to see what, if any, differences existed in posting behaviors in the number and types of posts made by faculty members who had completed a professional development program compared to those faculty members who had not participated in such a program. The theoretical expectation, based on transformational learning theory (Mezirow, 1991), would postulate a statistically significant higher number of posting behaviors in all categories for faculty members who had completed the training, as the program encourages interactions between faculty and students. The content analysis data set only examined discussion boards in classes that were fully online. One unique feature of this data set is that it examined instructors' actual posting behaviors, rather than just their attitudes.

### **Data Collection Method**

Data collection began with an email being sent to all 253 behavioral and social science faculty for the three semesters prior to the study, asking for support in evaluating professional development. The goal was to solicit a total of 50 different faculty members' classes, with half of the classes taught by faculty who had completed the OPCP and the other half of the classes taught by faculty who had not completed the OPCP. The initial email received responses from 73 faculty members willing to participate. However, only 16 of the 73 had completed the OPCP. A second email was sent one week after the first, and an additional 42 faculty replied. A total of 115 faculty members from the 253 who were initially contacted volunteered to participate, a response rate of about 45%. Of the 115 who volunteered, 27 had completed the OPCP.

Two lists of 25 faculty members were randomly generated, using a table of random numbers, from the two pools of participants. The first pool consisted of individuals who had completed the OPCP, and the other pool consisted of faculty members who had not completed the OPCP. After those lists were generated, participants' online classes were randomly selected, using a table of random numbers, from either the fall 2010 or spring 2011 term. The end result was a data set consisting of 25 classes taught by individuals who had completed the OPCP and 25 classes taught by individuals who had not completed the OPCP. Using this procedure, I was able to ensure that only one course from each faculty member was included in the sample.

All 5,078 discussion board postings were coded. However, a very low number of posts (23) did not fit into any of the community of inquiry teaching presence categories.

Those posts were omitted from this investigation. The percentage of posts excluded in this investigation was less than one half of one percent.

### **Characteristics of Sample Population**

The sample of classes is a unique sample but representative of the larger population of faculty member interactions in classes at FSCJ and at educational institutions that offer online professional development. The educational attainment of the faculty in the sample was consistent with the educational attainment of the faculty as a whole. Those with a bachelor of arts or bachelor of science degree represented only 4% of the population. Those with master's degrees represented 64%, and the remaining 32% held doctorate degrees. The percentage of those holding doctorates who participated in this part of the study was high for this type of college, and this number was consistent with the behavioral sciences departments, where more practitioners hold a terminal degree than in other fields. In this sample, adjunct faculty outnumbered full-time faculty. Sixty-six percent of the faculty members were adjuncts, and 34% were full-time faculty. Overall, the composition of the faculty sampled resembled the college faculty as a whole.

### **Data Coding and Reliability**

After the data set was established, data retrieval and coding commenced. Instructor postings were copied from the discussion boards and pasted into word-processing documents. Each post retained the date and time stamp. All instructor discussion postings for a course were arranged in chronological order in each discussion board. Each document consisted of all instructor course posts. I coded all of the discussion postings for all 50 classes. Rater 1 coded discussion postings for a random 25 courses, and rater 2 coded the remaining 25 courses. In cases of disagreement on the

original coding, the rater who had not originally coded the post then did so. Because each coder only answered *yes* or *no* to the three questions posed about each post, all decisions were decided by simple majority. Tables 12 and 13 show the interrater agreement between the raters and me, as the principal investigator. The interrater agreement can be determined in a number of ways, depending on how one defines the coding scheme. Two such interpretations are given in the following paragraphs, to illustrate the overall interrater reliability of the discussion board post coding.

One method of measuring interrater reliability is to look at the percentage of agreement of each individual decision versus the overall categorization. In this study each post was examined as having three yes/no answers to be made about that individual post. The three yes/no decisions were in response to these questions: (a) Is this post about design and delivery, as defined in the community of inquiry framework? (b) Is this post about facilitation, as defined in the community of inquiry framework? and (c) Is this post about direct instruction, as defined in the community of inquiry framework? Using the method on each individual decision, 5,078 posts—or 15,234 yes/no responses—were analyzed. The percentages of agreement and disagreement between the two raters and me are listed in Table 12. Most agreement was in the teaching presence subfactor of design and organization, where most of the decisions were coded as *no*. The teaching presence subfactor that had the least agreement was direct instruction, where more decisions were coded *yes* than *no*.

Table 12

*Interrater Reliability Between Principal Investigator and Raters: Yes/No Decisions*

Rater & Subfactors	Agree Yes	Agree No	Disagree	Total Decisions	% Agree
Rater 1					
Design and Organization	535	2,437	37	3,009	99
Facilitation	1,778	1,049	182	3,009	94
Direct Instruction	1,574	1,112	323	3,009	89
Total	3,887	4,598	542	9,027	94
Rater 2					
Design and Organization	218	1,828	23	2,069	99
Facilitation	1,046	899	124	2,069	94
Direct instruction	1,132	774	163	2,069	92
Total	2,396	3,501	310	6,207	95

Table 12 indicates that the interrater reliability was 94% for me and rater 1 and 95% for me and rater 2. The interrater reliability between rater 1 and rater 2 was not calculated, because the only time that rater 1 and rater 2 evaluated the same post was when the other rater and I disagreed.

A second way to examine the same interrater agreement or reliability interpreted a bit differently is to examine the overall categorization of the instructor posts. The type of post combines all three yes/no questions and places the post into one of seven categories. The post could contain design and delivery, facilitation, and direct instruction, or any combination of these three teaching presence subfactors. In this instance the number of matches or mismatches from the seven possible coding categories that occurred between the two coders was used to calculate agreement. The post could be coded as one of seven different types of post. In this case, the interrater reliability looked at the percentage of agreement on the overall code, not the individual yes/no questions. The interrater agreement can be seen in Table 13.

Table 13

*Interrater Reliability Between Principal Investigator and Raters, Post Categorization*

	Rater 1 No. of Posts	Rater 1 % Agreement	Rater 2 No. of Posts	Rater 2 % Agreement
Principal Investigator	3,009	92	2,069	95

This interrater reliability calculation is lower than the first measure; however, using this method also indicates high consistency between raters. As can be seen in Tables 12 and 13, the interrater agreement among the three raters exceeded 90% in all but one case, where the agreement was 89% for direct instruction with rater 1. Although more agreement existed between me and rater 2, the agreement with rater 1 was still strong, at over 90% for the overall reliability. Regardless of the type of interrater agreement or reliability computed for this investigation, the content analysis coding consistency has been examined and found reasonable.

### **Descriptive Statistics**

Table 14 presents the descriptive statistics, consisting of the means, standard deviations, *t*-tests, statistical significance levels, and Cohen's *d*, by types of posts, for those who completed the OPCP and for those who had not. Those who completed the OPCP had more total posts, more facilitation posts, more direct instruction posts, and more posts with two or more codes (complex posts), than those who had not completed the program. Statistically significant differences were found in facilitation, total posts, and in complex posts. The effect size is medium for both complex posts and total posts. The effect size for facilitation, as measured by Cohen's *d*, is small.

Table 14

*Average Number of Posts per Type of Post and Total Posts*

Code	Finished Program <i>M</i>	Finished Program <i>SD</i>	No Program <i>M</i>	No Program <i>SD</i>	<i>t</i> -test	Cohen's <i>d</i>
Design & Organization	9.24	7.46	12.36	12.90	0.67	.30
Facilitation	43.92	49.72	21.24	23.05	2.07*	.43
Direct Instruction	44.36	30.72	27.60	25.27	1.96	.60
Posts Coded for 2+ Codes	48.39	11.22	40.24	14.50	2.25*	.63
Total No. of Posts	126.40	86.87	76.72	59.48	2.35*	.67

*Note.* Uncodeable posts were omitted. The total number of omitted posts not coded was less than 1% of the total number of posts. \* $p < .05$

**Data Analysis**

The primary question this data set was intended to examine concerned the behavior of faculty who had participated in the OPCP and those who had not participated in the OCPC. The content analysis data set was used to examine whether or not posting behavior differed between these two groups; a difference was expected, based on transformational learning theory (Mezirow, 1991).

An independent-samples *t*-test was conducted to compare the total number of posts for those who had completed the OPCP and those who had not participated in the OPCP. A statistically significant ( $p < .05$ ) difference existed in the number of instructor posts for those who completed the program, compared to those who had not completed the program, as can be seen in Table 14. On average, those who completed the OPCP had significantly more posts ( $M = 126.4$ ) than those who did not complete the OPCP ( $M = 76.7$ ). The effect size, as measured by Cohen's *d*, was .67, indicating a medium effect.

Additionally, posting behavior by faculty who had completed the OPCP showed more complexity than posting behavior of faculty who had not completed the OPCP. Complexity is defined as having more than one teaching presence subcategory in a single instructor post. An independent-samples *t*-test was conducted to compare posts' complexity, the percent of posts with two or more codes for those who had completed the OPCP, compared to those who had not completed the OPCP. A statistically significant difference existed between the number of complex posts by instructors who had been through the OPCP and those who did not participate in the OPCP, as presented in Table 14. The effect size of this relationship, as measured by Cohen's *d*, was .63, indicating a medium effect. These results show that those who had been through the OPCP had a higher number of posts that were more complex than those who had not been through the OPCP.

Another finding from the data involves the number of facilitation posts. A statistically significant difference ( $p < .05$ ) existed in the number of facilitation posts for those who had not completed the OPCP and those who completed the OPCP, as seen in Table 14. These results indicate that those who completed the OPCP posted more than double the number of facilitation posts than those who had not completed the OPCP. The effect size, as measured by Cohen's *d*, was .43, indicating a small effect.

Because a statistically significant difference existed between the number of posts that are facilitative for those who had completed the OPCP at the time of this study and those who had not, examining the distribution of posts for the two groups seemed logical. Table 15 displays the percentage of posts by type for those who had completed the OPCP and for those who had not completed the OPCP. As a further explanation of the data, a

chi-square test of goodness of fit was performed, to determine if these two samples were from the same population. Although the distribution of posts is different for the two samples, the difference is not statistically significant:  $X^2(2, N = 50) = 2.57, p = .277$ . The posting patterns for those who completed the OPCP was not statistically different ( $p > .05$ ) from the posting patterns of those who had not completed the OPCP.

Table 15

*Percentage of Posts per Category by OPCP*

	Design & Organization	Facilitation	Direct Instruction
Completed OPCP	12.98%	41.12%	45.90%
Did not Complete OPCP	21.07%	34.23%	44.70%

The percentage of posts that fall into the category of facilitation are almost 7% more for those who had been through the OPCP, compared to those who had not been involved in the OPCP. A higher percentage of posts was expected in the category of design and organization for the group who had not participated in the OPCP, because these faculty would be responding to more questions about how the course was set up and organized.

### **Summary**

The results confirm that differences exist in posting behavior between faculty who had completed an online professional development program and those who had not been through such a program. Some of the difference observed could be attributed to the professional development program, as explained by transformational learning theory, which indicates that events trigger or transform experiences into learning, and that the impact of these experiences helps transform people and change their attitudes and behaviors. However, other competing explanations exist. This data set alone cannot fully address the research question. When triangulated with the other two data sets, this

study makes a convincing argument that supports the notion that online professional development played a role in changing online teaching behaviors. The online behavior was more frequent, more interactive, and more facilitative for instructors who completed the OPCP. Members of that group posted over 60% more posts than instructors who had not participated in the OPCP. Additionally, faculty members who completed the OPCP posted more complex posts, which were defined as having more than one teaching presence subfactor.

The initial hypothesis, supported by transformational learning theory, was that in all dimensions of online discussion board postings, there would be differences between those who had been through the OPCP and those who had not been involved in the OPCP. On average, those who completed the OPCP were expected to have statistically more posts than those who had not gone through the program and have a higher percentage of facilitation posts, as the OPCP focuses on constructivism and interactive facilitation. In terms of the number of facilitation posts, those who had completed the OPCP posted more often. Overall, the data from this data set confirm what was expected about online discussion board posting, when comparing a group of faculty who had completed an online professional development program to faculty who had not participated in such a program.

### **Interview Data Set**

A third data set was collected that consisted of interview data. Interviews were sought from faculty who had completed the OPCP at least 18 months prior to this study, but no longer than 24 months prior. The interview data consisted of eight open-ended questions about involvement in the OPCP. The interview data were used for two distinct

purposes. The first purpose was to answer direct research questions. The second reason was to uncover insights about the OPCP that can only be learned through asking participants.

For most of the interview data analyses, the epistemological approach was more positivistic than phenomenological in nature. The interview data set provided answers to specific research questions. The data set also provided additional insight that could only be learned through the interview process. Follow-up questions were designed to gain a deeper understanding of the “why” behind respondents’ answers. My connoisseurship was used in both collecting and analyzing the data. The theory did not emerge from the observations, as happens many times in qualitative research; rather, the interview data were used primarily to address specific questions.

The following sections will outline the purpose of the interview data collection and provide a description of the collection method. Participants’ characteristics are also presented, in addition to a description of how the data were analyzed. A detailed analysis of the data, as they pertain to the research questions, is presented, along with a final section that examines two distinguishing ideas gleaned from the interviews pertaining to the OPCP.

### **Purpose**

The interview data was collected to address two of this study’s research questions. The first question focused on changes in teaching attitudes resulting from the OPCP. The second research question focused on which part of the OPCP most impacted faculty members’ teaching. Several interview questions were constructed to explore this impact. Although the interview data set’s primary purpose was to address these two research

questions, the interview data also provided additional insight about the OPCP's impact on faculty. The interview data was examined for key ideas regarding the impact of the OPCP.

### **Data Collection**

An email was sent to all 38 faculty who had completed the OPCP 18–24 months prior to this study. A total of 18 faculty members responded, and all 18 were interviewed. Interviews consisted of eight questions, with follow-up questions as needed. The shortest interview lasted 12 minutes, and the longest interview exceeded 55 minutes. The average interview length was 23 minutes. The interviews were conducted within a two-week time frame; all interviews were recorded and transcribed. The recordings were destroyed after the transcriptions were verified for accuracy.

### **Characteristics of the Participants**

The participants consisted of 67% who held a master's degree and 33% who held a doctorate. Fifty-five percent of the faculty members were adjuncts, and 45% were full-time faculty. The breakdown of participants teaching in different subject areas from highest to lowest percentage is as follows: social sciences (33.0%), natural sciences (27.5%), humanities (14.0%), mathematics (10.0%), communications (10.0%), and workforce programs (5.5%). The overall composition of the group resembles the larger college population in many ways, except the group included a higher percentage of full-time faculty. Table 16 presents a descriptive chart of participants' basic demographic data and interview lengths. Pseudonyms were used to protect participants' identities.

Table 16

*Participant Demographic Information by Interview Duration in Minutes*

Name	Highest Degree Completed	Teaching Status	Teaching Discipline	Word Count	Interview Duration (Mins.)
Carla	Master's	Adjunct	Natural Sciences	856	12
Nancy	Master's	Full-Time	Social Sciences	1,086	14
Harry	Doctorate	Adjunct	Mathematics	1,174	14
April	Doctorate	Full-Time	Communications	1,679	16
Opal	Master's	Full-Time	Social Sciences	2,054	15
Candace	Master's	Adjunct	Natural Sciences	2,199	16
Bruce	Master's	Adjunct	Social Sciences	2,143	17
Renee	Doctorate	Full-Time	Humanities	2,532	18
Vivian	Master's	Full-Time	Social Sciences	1,904	19
Veronica	Doctorate	Full-Time	Social Sciences	2,387	20
Walter	Master's	Adjunct	Social Sciences	2,046	22
Virginia	Master's	Adjunct	Humanities	2,694	23
Wayne	Doctorate	Adjunct	Natural Sciences	2,674	28
Curtis	Master's	Full-Time	Communications	3,165	28
Loretta	Doctorate	Full-Time	Natural Sciences	3,647	32
Ruby	Master's	Adjunct	Math	3,423	34
Edna	Master's	Full-Time	Humanities	4,089	38
Dale	Master's	Full-Time	Workforce	5,156	55

**Data Analysis Process**

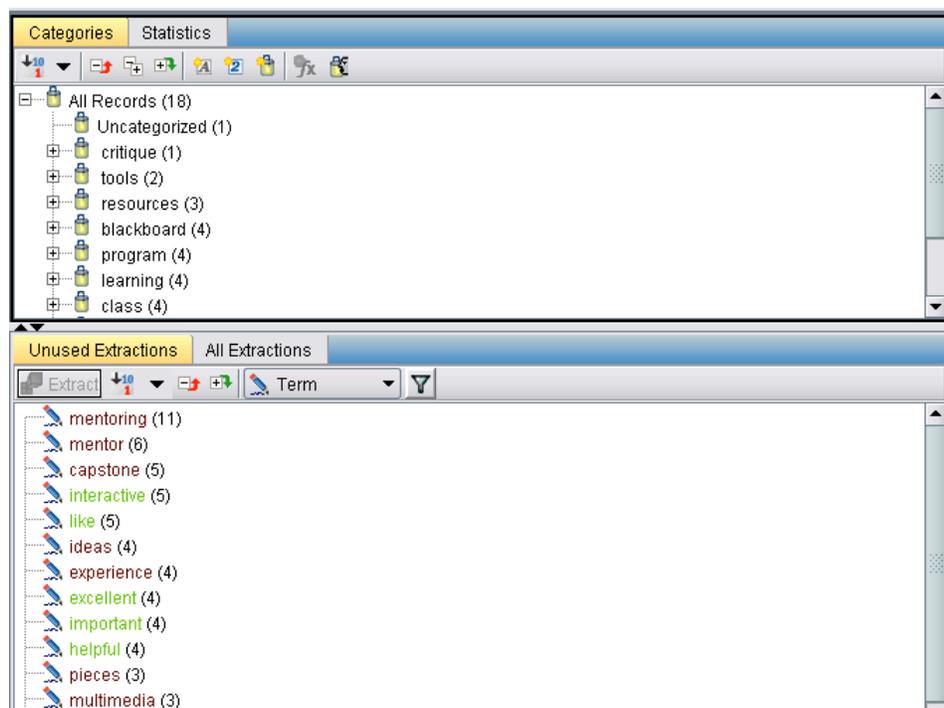
The analysis process for the interview data involved both structured and nonstructured aspects. The structured approach focused on reporting participants' answers to the questions about attitudinal change due to the OPCP and reporting what part of the OPCP had the greatest impact on participants. The second analysis process used with the interview data was what Patton (2002) called "inductive": no preexisting framework existed for analyzing the interview data. The goal of the second analysis was to identify other important aspects of the OPCP relevant to faculty development. The following paragraphs will describe the two data analysis processes used in this study.

The first data analysis process used for the interview data stemmed from two research questions and was more quantitative in nature. The first research question looked at the self-perceived impact the OPCP had on participants' attitudes. Participants were asked about their teaching attitudes before completing the OPCP and after completing the OPCP. Changes in teaching attitudes were determined by examining the responses of the 18 participants. The data were analyzed, categorized, counted, and then summarized, using the community of inquiry teaching presence framework (Garrison et al., 2000). During the analysis phase, categories were constructed from the community of inquiry framework, based on participants' responses. Following a comparison of the before and after the program, each interview was examined to determine whether or not participants provided any additional insights regarding the OPCP's impact.

The data analysis process for the second research question also followed a quantitative approach. This research question focused on which part of the OPCP most impacted faculty. Participants were asked a specific question; as needed, follow-up questions were asked for clarification. After analysis of the response to the specific question, each participant's interview was examined for additional information regarding parts of the OPCP that had influenced faculty practice by using the community of inquiry framework for teaching presence (Garrison et al., 2000). Response categories were constructed inductively from participants' responses.

The categories were created by first listening to the interviews and recording key terms and ideas identified in participants' responses. The second step was to read through the transcripts and examine the data for key ideas and concepts. The result was a master list of key concepts and ideas.

The next step in the process involved using Text Analysis for Surveys by SPSS®. The software searches the interview contents and extracts key words and phrases, similar to the manual process of listening to and reading through the interviews while creating codes. The software supplemented the data analysis process by confirming what was found in the manual process. Figure 4 shows an example of the SPSS® output, with frequency counts for extractions, the key words and phrases that were used to create categories, combinations of similar words and phrases. The concepts extracted from the 18 records consisted of 11 extractions for the term *mentoring*, six for *mentor*, and five for three other concepts. Categories with four extractions included class, learning, program, and blackboard.



*Figure 4.* SPSS® text analysis extractions. The top panel shows the data categories created by the SPSS® text analysis. The number indicates the number of records that match the category. The lower panel shows the key terms extracted from the data that are not yet categorized. Categories can be manually manipulated to include or exclude records.

Comparisons were made between the manual extractions and the computer extractions to create a master list. The computer analysis was performed to verify that no important categories were missed when the manual data analysis process was performed. The computer extractions did not provide any additional insights that than those already found through the manual data coding process.

The final analysis method used for this data set was exploratory in nature and consisted of examining interview contents for significant ideas about professional development derived from my connoisseurship surrounding faculty development. This inductive process did not involve a preexisting list of ideas; instead, a list of ideas was constructed from the participants' responses, after analyzing all of the interview data.

The data analysis process occurred within the frame of my connoisseurship, which influenced what I chose to examine. Eisner (1998) argued that a researcher's connoisseurship can be used to gain deeper understanding of a phenomenon. As mentioned in Chapter 2, one of my areas of interest is in improving professional development program evaluation. Program evaluation also happens to be one of the areas of growth for application of qualitative methods (Patton, 2002). My frame for the data analysis for this section was influenced by both my focus on evaluation and my connoisseurship.

The data analysis process began during the interview process, when key ideas were recorded in notes taken during the interviews. Major challenges occurred in approaching the open-frame analysis, so a two-month break was taken between the structured interview analysis and the unstructured interview analysis, which allowed for a fresh approach to the data. The data analysis process continued with listening to each

interview several times, seeking key ideas about the OPCP. After a master list of ideas, concepts, and phrases was created, the key terms and ideas were combined into larger, more meaningful categories. This data reduction process resulted in key ideas about the OPCP. The next section presents the findings for the first research question on attitudinal changes.

### **Data Analysis: Attitudinal Changes**

In this study, one of the research questions focused on attitudinal changes due to the OPCP. Participant were asked about their perceptions about their teaching prior to completing the OPCP. Participants were then asked about their perceptions about their teaching after completing the OPCP. This section examines participants' responses to these inquiries.

Most participants stated that some sort of attitudinal change about teaching occurred as a result of the OPCP. One participant stated that no attitudinal change occurred as a result of the program, but the other 17 participants talked about how their attitudes changed due to the OPCP. The types of changes in attitudes were coded into four distinct categories: interaction, learning styles, facilitation of learning, and fostering critical thinking.

The first category is called interaction, which refers to changes in attitudes pertaining to interactions that transpire with students. In this category, faculty stated that, after completing the OPCP, they believed that they should be more interactive and more engaged with students. Candace stated that she realized she needed to be more interactive: "I need to be engaged and interacting with [students]. We need to do debates

where we can discuss and do other things to be more involved with our students online.”

Ruby provided another example of interaction when she stated the following:

My attitudes and behaviors changed. We have to have open discussion boards where we reintroduced ourselves. Where students don't feel quite so isolated in an online—fully online—environment. We have to talk with them and be engaged with them. Since the program, I see why it is important to be engaged with the students online. Before I did not feel that students needed to be engaged, but now I do.

Participants reported the greatest change in attitude and practices related to interaction.

The change in attitude in this category was a change to a belief that one needs to engage students more often and with a greater variety of methods.

The second category of attitude change involved recognition and use of learning styles. Walter's statement summarized the key parts of recognizing diverse learning styles.

I used to not believe in using a lot of pieces. I now use a lot more pieces in different places. I use different kinds and types of activities and exercises, rather than one discussion question and assignment. I'm focused more on their thinking and their cognitive skills. Better formulation of multiple-choice questions using randomization and things of that sort. I try to use a variety of things to get at all of Gardner's multiple intelligences.

The attitudinal change with learning styles involved a shift in attitude to incorporating or being open to incorporating different learning styles in a course—for example, by using more media. Although learning styles was not the primary attitudinal change, it was the second most-cited attitudinal change.

The third category of attitudinal change involved facilitation. Facilitation is how faculty participated and were involved in discussion boards to promote student participation. Nancy's statement was a strong example of an attitude change about facilitation.

What is different is I now believe that the discussion boards are probably the centerpiece of the online courses. I believe that I now have to take more time and effort modeling what I want the students to do in their posts, and in all other parts of the course. When I respond to posts, I believe I should prompt them to keep them engaged.

Nancy's comments illustrated a facilitation attitudinal change, which focuses on how to facilitate online discussions.

The fourth category of attitudinal changes involved promoting critical thinking. Two faculty members stated that their attitudes changed about being able to conduct critical thinking tasks and assignments in online classes. These faculty members stated that prior to completing the OPCP, they believed that students could not be engaged in critical thinking in online classes. After completing the OPCP, they believed that critical thinking both could and did happen in the online classroom.

The complete comparative breakdown of the attitudinal change by category is presented in Table 17.

Table 17

*Reported Main Attitudinal Change, Before and After OPCP*

Attitude Change	No. of Participants
Interaction	7
Learning Styles	5
Facilitation	3
Critical Thinking	2
No Change	1
Total	18

The four categories of attitude change directly correspond to the community of inquiry framework (Garrison et al., 2000) employed in this investigation. The attitudinal categories were matched to their appropriate teaching presence category. Table 18 shows

the breakdown of the attitudinal changes for the 17 participants who reported changes in attitudes, when applied to the community of inquiry framework.

Table 18

*Attitudinal Changes: Community of Inquiry Framework*

Attitude Change	No. of Participants
Facilitation	10
Design and Organization	5
Direct Instruction	2
Total	17

Most of the attitudinal changes pertained to faculty members' facilitation of online classes. Based on the interview statements, faculty members changed attitudes in this category more than in the other two categories combined.

The least likely attitudinal change was reported in direct instruction, which includes beliefs about summarizing the discussion, presenting questions, providing feedback, and responding to technical concerns. Because direct instruction concepts are found in both face-to-face and fully online classes, no significant changes were expected in this category. Direct instruction focuses on course content, which does not significantly change in an online class from a face-to-face class.

In summary, participants definitely reported attitudinal changes. Attitudinal changes regarding facilitation were more frequently reported than changes in the other two teaching presence categories of the community of inquiry framework, design and delivery and direct instruction.

**Data Analysis: Most Important Component**

An additional research question focused on what part of the OPCP had the greatest impact on participants' teaching. The OPCP consisted of several online classes,

in addition to a two-step mentoring process. Participants were asked which component most impacted their teaching, and follow-up questions were asked about why that part was the most important. Participants were provided a prompt consisting of the six components of the professional development program. These components included the 4 courses in the program, andragogy, Blackboard™, multimedia, the capstone, and the two mentoring components, being mentored by someone and then mentoring someone. The next few paragraphs will examine the findings regarding participants' views on what was the most important component of the OPCP.

Although mentoring was listed as two distinct items on the prompt and is regarded as two unique events in the OPCP, participants did not view mentoring as two distinct processes. When asked which mentoring experience was the most important, most participants were unable to isolate either the mentor or mentee process. Participants identified being mentored and being a mentor as equally important parts of the OPCP. Because of this lack of differentiation, the two activities were combined into a single category, mentoring. The most important parts of the OPCP, as reported by the participants, are presented in Table 19.

Table 19

*Most Important OPCP Part*

Component	No. of Participants
Mentoring	9
Andragogy	5
Capstone	2
Blackboard™	2
Total	18

The top two items were mentoring and andragogy. Mentoring was mentioned by half of the participants; over 25% of participants mentioned andragogy. Participants'

reasons and explanations revealed additional information about their experiences, which are analyzed in the following paragraphs.

Participants discussed different aspects of the mentoring experience. Three participants stated that they thought mentoring was important because they could see how others taught online and how they managed the discussions. Participants wanted to see how others set the climate and tone in an online class through the responses of the instructor in the discussion areas. Others wanted to see another person's class to see how he or she managed agreements and disagreements in the discussion boards. As Edna stated, "I wanted to know how others handled the discussion boards—you know, how they encouraged students to participate more and how they handled problems." Virginia echoed a similar idea. She stated, "I learned a lot from my mentor. They worked with me on how to work responding to my students. I was not sure what to do, and they helped me in that way." Edna's and Virginia's responses, along with other comments, fall into the facilitation category of the community of inquiry framework (Garrison et al., 2000), as these comments center on promoting discussion and setting the learning climate.

Other participants cited mentoring for different reasons. Their aim was not to focus on facilitation information, knowledge, and skills, but rather to focus on direct instruction. As a result of the interactions between mentors and mentees, participants talked about how they learned to give more effective online feedback. As Nancy stated,

Through the mentoring process I learned how important it was to give better feedback. My mentor was great, as he gave me good ideas how to give online feedback that would help my students. When I was a mentor, I also learned from my mentee. She helped me with how to grade discussions.

Comments that focused on how instructors taught online were categorized as direct instruction. Dale's comments represented another example of a direct instruction focus. Dale stated that "the best part of the program was that I learned how to make better discussion questions. I know how to work the discussion boards, which I stole from my mentor." A breakdown of the mentoring reasons, using the community of inquiry framework (Garrison et al., 2000), is presented in Table 20.

Table 20

*Mentoring Most Important Reason*

Reason	No. of Participants
Facilitation	6
Direct Instruction	3
Design & Delivery	0
Total	9

Although mentoring was identified as the most important component, five participants mentioned andragogy as the most important component of the professional development program. Of these five participants, four had similar reasons for selecting the andragogy course as most important. Walter's comments are typical: "I liked the pedagogy course because of all of the tools that were mentioned about how to build your class. I really liked all of those tools. They helped me build my course." In the community of inquiry framework, Walter's rationale fits under design and organization. Ruby gave another example of a design and organization focus: "I thought the pedagogy course was the biggest help. That course showed me how I could use different teaching practices in online teaching." Loretta stated that she "learned about how to be more interactive online with the students. I did not know there were so many ways to interact."

Most of those who selected andragogy as the most important course were concerned with course design and organization.

Participants disagreed about the most important component of the OPCP. Although a majority of participants stated that mentoring was the most important component, several other participants mentioned the andragogy course. However, the focus of these two components and the groups who selected them seemed to differ. Those who selected the andragogy course were more focused on course design and organization, while those who selected mentoring were more focused on facilitation and direct instruction.

The preceding paragraphs examined two specific research questions, concerning which component of the OPCP was most important, and how attitudes about teaching changed due to the program. Although the data consisted of interview data, the analysis more closely resembled a structured analysis, with answers to specific questions sought in the interviews. The next section examines the interview data in a more open manner. All interview content was used in this process; general ideas were extracted and are presented as they related to faculty professional development.

### **Open Qualitative Data Analysis of Interview Data**

The final analysis of the qualitative data set used the interviews in their entirety as a single data set, instead of primarily focusing on one or two interview questions. The data set was examined for significant ideas that related to faculty development programs, my area of connoisseurship and the focus of this study, as described in Chapter 3. The data analysis process used was an inductive process of finding relevant themes, as described by Patton (2002). My connoisseurship of faculty professional development

was used to find the relevant themes in the interview data (Eisner, 1998). The overall data analysis produced three significant ideas. I refer to the first idea as *learning centered*. Learning centered captures why individuals were involved in the OPCP. The second idea participants conveyed was the idea of social networking. Social networks were formed as an informal part of the OPCP. The final idea was that of validation: participants sought validation that their methods were acceptable practice. In the next few sections, I describe these ideas and use interview excerpts to build a case for the existence of these ideas in the data set, as they relate to professional development.

### **Learning Centered**

The first concept of importance to faculty development relates to why the individual elected to participate in the voluntary OPCP—that is, what was the participant’s focus or motivation? Learning centered speaks to the participant’s motivation in the OPCP. Learning centered is part of what Knowles, Holton, and Swanson (2005) termed *orientation to learning*. Orientation to learning is the tendency of adults to focus on learning that has practical application. Learning centered also includes what Knowles et al. referred to as *readiness to learn*. Readiness to learn involves learning what is necessary to be successful. Learning centered describes many of the participants interviewed in this study.

Early in most of the interviews, participants were clear about why they signed up for the OPCP. As Dale stated,

I came from the old school, and I realized that I needed this program. Online was the wave of the future, so if you don’t know how to teach online, you might as well get another profession. So that’s why either of the programs are good. I knew that this was the wave of the future.

Candace echoed similar ideas, “Because I wanted to teach online and that was really the only way that people could do that. At least that’s what I thought, so I gave it a thought and that day I signed up for the program.” Dale’s and Candace’s statements were typical in that each focused on gaining skills needed in the future. Many interviewees stated a similar readiness and desire to learn about the new methodologies of online teaching. Participants already acknowledged their deficiencies and the belief that the OPCP would help them address these deficiencies.

While Candace and Dale both were motivated to participate in the program and were aware of the pedagogical or andragogical aspects, other participants stated they were disinterested in the pedagogical or andragogical connections. Instead, they focused more on technical skills. Curtis also expressed an intrinsic motivation for participating in the program.

I signed up because I thought it would help me improve my pedagogy for online teaching, and hopefully it would make me a better professor. Because prior to this program, I taught a little bit online, but I was hoping to pick up some additional tips and any activities or research that would have helped me to become a better online professor.

For Curtis, participating in the OPCP was meant to improve andragogy and help him become a more effective teacher. Walter echoed the ideas of becoming a more effective instructor. He said he participated in the OPCP because he “thought it was a good program that would enhance my teaching online. It would give me some skills that I might not have already. I thought that I would benefit from the program. It would help my teaching.”

In this excerpt from April’s interview, she focused on learning technical skills: “I had no problems with my teaching practices or pedagogy. I was really looking more for

the technology. I incorporate more technology into my courses, and I want to be one of the first ones to get new technology.” These same technical skills were also what Virginia identified as important: “I was brand new to the college, so I thought I would take everything that was here. I also teach for another online school, and I thought that would give me some additional technical skills that I could use in my teaching.” Most participants were more focused on the andragogical or pedagogical aspects of the program, but a few, like April and Virginia, sought technical skills.

Andragogical or technical reasons for participating are learning-centered activities. These examples illustrate an orientation to learning (Knowles et al., 2005), where the focus is on learning either broad information or specific technical skills. Most of the reasons stated for the OPCP participation fell under the learning-centered theme. Two cases seemed to express extrinsic motivation as a reason for their participation, rather than intrinsic motivation. For both Nancy and Loretta, their participation was extrinsically motivated. Nancy stated the following when asked why she signed up for the OPCP.

I signed up because they told me they would give me a laptop if I signed up for this program, so that’s really why I signed up for the program. They wanted me to take this course, so they told me that if I took this course, I would get a computer. That kind of enticed me by giving me a computer, you know, so that’s why I got involved.

Loretta was also forthcoming about her participation. She stated,

I did as any adjunct would do. I really wanted the 500 bucks for completion, and I thought that would help me get to be full-time at the college. Completing the program really did open up doors for me to get into the college. I originally signed up, however, because there was a monetary incentive associated with it.

Most of the participants stated reasons consistent with being learning centered and intrinsically motivated, which coincides with Knowles et al.'s (2005) andragogical model. The learning-centered theme includes the readiness to learn, and an orientation to learning focuses on the constructs of the andragogical model, as presented by Knowles (1973). The next section examines the second theme, networking.

### **Networking**

The second theme of interest is the role of networking. Networking can and does hold different meanings for different people. Sociologists agree that networking is a social structure formed through significant social interaction, offering support to members (Muntz, Melvin, & Nortz, 2009). Participants described different types and levels of interactions they engaged in during the professional development activities that resulted in social network formations. These networks were a key component of the OPCP. However, the program designers did not intend for these informal networks to provide continued support beyond the OPCP.

Some participants mentioned that their contact with other faculty members was a critical component of the OPCP. Wayne summarized this aspect: "In my opinion mentoring is probably the most important. I mean, I still have contact with my mentor. We talked a lot and still do today. We talk about new ideas and tools about online teaching." In some instances these partnerships continued, years after the formal mentoring relationship in the OPCP ended.

Curtis talked about the importance of working with others, a part of networking during the mentoring component of the OPCP. He stated the following:

It's nice when you can have somebody look at your course, and then when you have to look at somebody else's course, it kind of shows you what to

look for. You can pretend you're a student, and you can see how I would see it as a student. What do I like? What don't I like? And the same thing when you're giving feedback to another person. You also see additional areas where you may be weak and didn't even realize until you see it. You see that they're doing something similar to what is going on in your class. I can see I am doing what you are doing, and I can see it is not working for this guy, so maybe I should revisit it in my class

Curtis stated the importance of seeing what others are doing, and maintaining contact or networking.

Candace also mentioned the networking that accompanied the mentoring part of the OPCP. She stated,

[It was] enlightening to see what someone else was doing as they began the program, and to look at the work they were doing and what they were using. It gave me ideas. I value that experience most of all because it let me see what other people were doing so that I could take ideas from them.

For Candace, mentoring included a social networking element. Her interactions with others also included "taking ideas from them."

April described another facet of the social networking aspect found in the OPCP.

The mentoring was like a critique. I got to see how other people were doing it. I got to make sure that I did it better. I love criticism, so I enjoyed the mentoring. And it made me a better person because I knew what to do. I learned that from looking at what my mentor was doing. I still keep in touch with my mentor to bounce ideas off of them.

For April, the social networking interactions during mentoring validated that her actions were appropriate. The feedback from the social networking was important for April.

Veronica summarized the networking aspect found in the OPCP:

The best part about [the program] was the ability to meet and interact with people whose paths that would not otherwise have crossed. I always enjoy meeting people. I met people from all over the world. I remember

Honolulu Bob and other people from all over. And just the experience of exchanging information with my peers was rewarding. And being somewhat satisfied with some of what I was doing was right. It is always nice to know that some of the things you were doing were right. I can't stress enough how valuable it is to interact with the people in the classes, whether they're your peers or current students.

For Veronica, social networking was easy to identify. She recalled the email interactions that occurred between sessions. The social network helped her and others in the OPCP.

The final theme in the qualitative analysis is active engagement. The next section will present evidence of active engagement in the ideas interviewees presented.

### **Active Engagement**

A third significant theme I found in the interview data was increased active engagement—what Chickering and Gamson (1987) called active learning among students. Participants reported that as a result of the OPCP, their students were more engaged or active in many different parts of the learning process. The next few paragraphs will cite examples of what participants reported, to build a case for active engagement as a theme.

For some faculty, active engagement was very evident, but others were unsure of its presence. Opal stated, "I think [students are] more engaged, but I don't know if that relates to them staying in the course because I didn't have a retention problem before online." Opal believed they were more engaged but was uncertain. Others, like Vivian, gave examples of how students were engaged. Vivian spoke of the impact the OPCP had on her students:

I can actually relate to my students and see that I'm doing justice to them and doing more than just being responsive to their questions. It's actually a one-on-one. There's also more interaction now. I hardly had discussions before, and so now we have discussions, and the students stay engaged more. I mean there is so much more to offer them today to keep them engaged.

For Vivian, her students were more involved in the class discussions, whereas prior to her completing the OPCP, this element was missing from her classes.

Another example of active engagement was described by Edna, who reported exchanges with students. Edna spoke about her students' involvement and their engagement with the course content since she completed the OPCP. Edna stated,

I think after the program there's more interaction. For instance, instead of just posting an assignment to the discussion board for students to answer, I'll make sure that they have to do something with it. And I have a lot more of them going out to the Web and finding material and bringing it back in to the class discussions. So I think that would be the big thing that changed from the program, was my level of interaction with the students.

Edna said that she involved the students in learning more than she had prior to her involvement in the OPCP.

Like Edna, Walter also mentioned students interacting with the course content. He stated that his teaching changed, and his students were more actively engaged as a result of the OPCP:

I use a lot more pieces—a lot of different kinds and types of activities that are written discussions and exercises, rather than a discussion question that was more like find something, more like an assignment, and now I'm focused more on their thinking and their cognitive skills.

Walter reported that he had created an environment that was richer with learning objects that could stimulate learning and keep students engaged.

Three faculty members did not feel that the OPCP had any impact on students in terms of success or retention. For example, Veronica stated that “my students feel that I care about them. I've always had very high retention and success, so I don't think this program had any impact on grades or retention. So there hasn't been any real difference there.” Others, however, expressed an increase in student engagement. Many

participants who completed the OPCP talked about how their students benefited.

Although one cannot make direct connections between the OPCP and student outcomes, anecdotal reports gave some evidence to support the notion that the OPCP impacted student learning, as reported by faculty participants.

The open, qualitative analysis centered on examining the interviews from the faculty professional development connoisseurship lens. Eisner (1988) describes the four-part process of educational criticism, which is a sequence of making connoisseurship public. In this study, description and thematics were the two parts of Eisner's educational criticism that made my connoisseurship public. Excerpts from interviews were presented to build a case for the existence of the three themes: learning centered, networking, and active engagement.

### **Qualitative Data Summary**

The interview data set addressed two research questions and was used to discern three key themes impacting online faculty development. In terms of the research question about which part of the OPCP was most important, mentoring was the most cited. Most of the attitudinal changes reported as a result of the OPCP were in the area of facilitation. After completing the OPCP, faculty members had different ideas about how to facilitate their courses. The final section of the analysis for the interview data set was the presentation of the three key themes regarding online professional development for teaching online. The three themes were learning centered, networking, and active engagement. These themes are important to those who work in professional development and were critical to the OPCP's success.

## Chapter Summary

In this chapter the data analysis was presented for both the quantitative and qualitative data sets, which were collected to answer the four research questions. Three distinct data sets were collected in this study. The following section will summarize the findings from the three data sets.

The first data set consisted of the teaching presence questionnaire responses. The main purpose of the data set was to examine differences in participants' perceptions of teaching presence before and after OPCP completion. The teaching presence factor for students was modified for use with faculty and tested for consistency. An exploratory factor analysis confirmed that the 13 items do reduce to one factor for faculty. No statistically significant difference in teaching presence was found between participants' pre- and post-program responses.

The second data set consisted of the coded instructor discussion postings for 50 online classes. Comparisons were made between classes taught by faculty who had completed the OPCP and classes taught by faculty who had not completed the OPCP. Overall, the number of posts in classes where faculty had completed the OPCP was significantly higher than for those who had not. Those who completed the OPCP had a larger number of facilitation posts. The difference between the two groups was statistically significant. In addition to a statistically significant increase in the number of posts, the complexity of posts was also statistically different. Those who had completed the OPCP had a

significantly higher number of discussion posts that fit into more than one category of teaching presence.

The third data set consisted of the open-ended interview responses. The interview data were collected to address two specific research questions, as well as to gain a deeper understanding of the professional development's impact on teaching. The first research question focused on attitude change. Participants attributed three changes in attitude to the program. After completing the OPCP, faculty believed they needed to be more interactive and to engage students more. Additionally, faculty believed they needed to include more activities to reach students who had different learning styles. A final attitude change was observed in facilitation attitudes—that is, how faculty encouraged students to be involved and encouraged students to participate in discussion boards. The second research question focused on what participants felt was the most important part of the program. Participants mentioned mentoring and andragogy as the two most important parts of the OPCP.

The interview data set also provided some important general ideas about faculty professional development. The first idea was that most faculty participating in the program did so because of their learning-centered focus. Those participating in the OPCP valued the informal networking. The last important point is that those who completed the OPCP reported that they were more actively involved teaching their classes, and their students were more involved.

Overall, the OPCP appears to have impacted online teaching. Faculty who completed the OPCP displayed different behaviors and attitudes from those who had not completed the OPCP. And on average, Faculty who completed the OPCP engaged students more and participated more in the discussions than those who had not completed the OPCP. Faculty who completed the program reported they posted more to the discussion boards and replied more often to students in the discussion boards. The next chapter will summarize the study and discuss its implications.

## CHAPTER 5 SUMMARY AND DISCUSSION

Chapter 5 will present a summary of the study and the findings. Particular emphasis is placed on the main research question and the conclusions reached regarding the main research question and the subquestions. The purpose of this study was to investigate the impact online professional development has on the teaching practices and beliefs of faculty who teach online.

As online learning enrollments continue to increase (Allen & Seaman, 2011), educational leaders need to offer quality professional development opportunities to facilitate effective online teaching. Along with the need for professional development, tools and methods are needed to assess the effectiveness of these professional development programs. This chapter will conclude with an examination of the study's limitations, recommendations for future research, and recommendations for practice.

### **Summary of the Study Problem and Methodology**

As online learning has increased in popularity, so has the need for quality professional development to prepare faculty to teach online. The quality and effectiveness of online teaching have been questioned in the past, and many are still unsatisfied that online teaching is quality teaching (Wickersham & McElhany, 2010). Online professional development programs can positively impact the quality of online teaching.

In addressing the research question, the teaching presences component of the community of inquiry framework (Garrison et al., 2000) was used as the theoretical model. An additional theoretical model used in this study was transformational learning theory (Mezirow, 1991), which was used to explain how the professional development program produced change in teaching presence.

I used a mixed methods approach consisting of questionnaire data, content analysis data, and interview data. Each of the data sets addressed a different part of the main research question. Although each of the data sets was unique, they were compatible and complementary. When combined, these three data sets permitted the triangulation of the observations and yielded a more comprehensive picture of how professional development impacted online teaching.

The first data set collected was from the faculty self-assessment teaching presence questionnaire modified for this study. A questionnaire was sent to all faculty who had completed the OPCP 6–18 months prior to the study. Emails were sent to 103 completers of the program, and 63 people responded to the questionnaire. The questionnaire was a retrospective pretest and a posttest, which asked participants to rate their teaching presence behaviors. The retrospective pretest asked participants to rate their behaviors before an event and then rate their behaviors after the event, at the time of questionnaire completion. The analysis for this data set first consisted of using factor analysis to assess the usability of the faculty self-assessment tool. Comparisons of the retrospective pre-OPCP survey and post-OPCP survey were conducted using the *t*-test statistic.

The content analysis was the second data set collected, and it consisted of discussion board postings from 50 different online classes. Half of the classes were

taught by social sciences faculty members who had completed the OPCP, and the other half of the classes were taught by social sciences faculty who had not participated in the OPCP. The discussion board postings were coded according to the community of inquiry teaching presence scheme. Discussion posts were coded as design and delivery, facilitation, and/or direct instruction. Data analysis consisted of comparing the two samples with the *t*-test statistic.

The third sample collected consisted of the qualitative interview data. A total of 38 people were identified as potential participants for the interviews. An email invitation was sent to all eligible faculty. A total of 18 faculty members responded, and interviews were scheduled with all 18 participants. The purpose of the interview data was to assess attitudinal change due to the OPCP and to assess which part of the OPCP most impacted faculty.

The next section will examine each of the research questions and the main conclusions drawn regarding each question.

### **Review and Discussion of the Main Conclusions of the Study**

The main conclusion of the study is that online professional development can impact faculty who teach online. The main research question was refined into four subquestions. In the following section, I will address the subquestions that stemmed from the main research question and then further explore this study's main conclusions.

#### **Research Question 1: Teaching Attitudes**

The first research subquestion asked, Does an online professional development program change attitudes about online teaching? Data used to assess this research

question came from the faculty interviews. The most noted attitudinal change regarded interactivity, but other attitudinal changes were observed.

Faculty who entered the OPCP expected to learn new ideas and ways to teach in a new environment. Most of the participants stated they signed up for the program because they knew they needed more information about how to teach online. Many said they changed their attitudes about how to teach online. Faculty members changed attitudes regarding how to interact with students. Faculty also changed their attitudes about incorporating different learning styles into courses. The final attitudinal change involved a shift from a more traditional teaching role to a facilitation role.

The reported shifts in attitude about levels of interactivity was expected, as the philosophy behind the OPCP, like other programs, has a core belief that student engagement is a key to successful student learning. The findings from the Community College Survey of Student Engagement (2011) and the National Survey of Student Engagement (2011) both support the idea that increased student engagement improves student learning.

Another attitudinal change was found regarding learning styles. Faculty members, after completion of the program, spoke about the importance of incorporating different learning styles into their courses. Although changes in beliefs about learning styles are not a stated outcome of the OPCP, learning styles are addressed in the program. Specific learning outcomes about learning styles are addressed in the multimedia course. The shift in attitudes regarding faculty stating they wanted to incorporate more learning styles into the course is consistent with the professional development program's goal of enhancing student learning.

A final attitudinal change was observed in a shift in belief from a more traditional, lecturing teaching role to a different role, called facilitation. Faculty members initially wanted to know how to best teach online. Many focused on wanting to know how to upload materials and on how to present lectures online. By the completion of the program, faculty members had shifted their attitudes away from the traditional teaching role to more of a facilitation role. Faculty members spoke about how their attitudes changed as they began to understand the online environment. The attitudinal shift from instruction to facilitation is also consistent with the OPCP's planned outcomes.

The OPCP influenced several attitudes about teaching. Attitudinal shifts occurred regarding interactivity, learning styles, and facilitation. The changes observed in this study are consistent with the OPCP's desired outcomes.

### **Research Question 2: Self-Reported Teaching Practices**

The second research subquestion focused on reported teaching practices: What changes in teaching practices, if any, do faculty report after participating in an online professional development program? Using the retrospective pretest methodology, participants were asked to complete the faculty teaching presence questionnaire. Observed differences were found between pre-OPCP behaviors and post-OPCP behaviors on most of the items, but these differences were not statistically significant.

Statistical comparisons were made on the three teaching presence subscales, and no statistically significant differences were found; however, in all cases the post-OPCP survey means were higher than the pre-OPCP means for the three teaching presence subscales. Differences were observed in the individual items that make up the teaching

presence subscales. The four items that were most different between the pre-OPCP activity and the post-OPCP activity all seem to center around interaction.

The present study found an overall increase in agreement with the teaching presence survey items after the OPCP, as compared to before the OPCP, but the differences were not statistically significant. The use of the retrospective pretest may be part of the reason no statistically significant difference was found. Rather than obtain actual pre-OPCP scores and post-OPCP scores, the pretest scores were collected using the retrospective pretest approach. As suggested by Nimon, Zigarmi, and Allen (2011), a more effective strategy might be to include an actual pretest, a retrospective pretest, and a posttest, to get a more accurate picture of change that occurs.

### **Research Question 3: Observed Teaching Practices**

The third research question examined observed teaching practices: What are the observed differences in teaching practices, if any, between faculty who have completed an online professional development program and those who have not completed a program? For this research question, teaching practices were defined using discussion board postings. Discussion board postings were coded into the teaching presences subscales, as defined by the community of inquiry framework (Garrison et al., 2000). A comparison was made between those who had completed the OPCP and those who had not. The overall finding was that observed teaching practices, as defined by discussion board postings, do differ. Those who completed the program had more posts.

The conclusions drawn from the data indicate that those who have completed the OPCP are more actively involved in the class, as measured by the number of discussion

board postings. The overall total number of posts was significantly higher for those who had completed the program, compared to those who had not completed the program.

When examining the posts by subcategory, a different picture emerges. Those who had completed the program had more posts that were classified as facilitation and direct instruction; those who had not completed the program had more posts in the design and organization category. However, only the facilitation difference was statistically significant. A major reason appears to be the high standard deviation within each group. The high standard deviation implies that other factors, in addition to the OPCP, might affect these outcomes.

Participation in an online professional development program does change some observed teaching practices, such as discussion board postings. There was a significant difference in the number of discussion board postings overall. It was expected that those who had completed the program would have more postings in the area of facilitation and direct instruction. A statistical difference was found in the area of facilitation, but not for direct instruction. These faculty members learned through the OPCP that increased involvement with online students was a desired outcome. Participation in the OPCP appears to have impacted participants and made participants more active in their online classes, as measured by the increased number of discussion board postings.

#### **Research Question 4: Most Important Aspect of the OPCP**

The final research question pertained to what part of the OPCP most impacted faculty: What part or aspect of an online professional development program had the greatest impact on faculty in developing or strengthening ideas and behaviors about teaching online? The data used to address this research question came from the interview

data. Most of the participants reported that mentoring was the most important part of the OPCP. However, other participants mentioned andragogy as the key element. The reasons participants gave varied, providing insights about professional development programs and how to make them more effective.

Many of those interviewed cited mentoring as the most important aspect of the OPCP. The reasons varied and included some key ideas. Some participants needed the validation that their online teaching methods were effective. Other faculty wanted ideas about how colleagues approached certain situations. Mentoring provided these unstructured, authentic opportunities that many found useful.

Some participants, however, mentioned andragogy as the most important part of the program, rather than mentoring. Many of those who mentioned andragogy were adjuncts who had less teaching experience and thus may have found the information about teaching essential.

### **Major Conclusions**

The present study was a case study of online professional development with the goal of improving online teaching, as related to discussion forum participation. Within the community of inquiry theoretical framework, a mixed methods approach was used. Measures of participant satisfaction were insufficient to capture the impact of professional development; therefore, a mixed methods approach was used to collect evidence related to changes in behaviors and attitudes. The major conclusions drawn from this study are presented below.

The first major conclusion from this study is that the OPCP impacted how faculty members teach online. The main research question was separated into four subquestions.

The conclusions from the four subquestions support the notion that online professional development can impact online teaching in positive ways. Faculty members gained knowledge, changed attitudes, and changed behaviors after completing the OPCP. Faculty members reported that their attitudes and behaviors shifted, becoming more interactive and facilitative, both attitudinally and behaviorally; however, the results were less dramatic than anticipated, which is the basis for the second conclusion.

The second conclusion focuses on what was not found. Anticipated differences were expected between the retrospective pretests and posttests, but no such differences were found. Differences in the teaching presence subscales were expected between the group who had completed the OPCP and those who had not completed the program. No statistically significant differences were found between these two groups. Although some differences were found, that many anticipated differences were not found is noteworthy. There may be a host of reasons these differences were not found. In some instances, true differences may not exist. In other instances, the sample size may be too small to obtain statistically significant differences. Additional research would shed light on the reasons anticipated differences were not found.

Related to the second conclusion is a third conclusion about the use of the retrospective pretest. Although no differences were found between the retrospective pretest and the posttest measures of teaching presence, the retrospective pretest method shows promise as a research tool, especially for professional development activities involving self-rankings. The retrospective pretest asked participants to reflect and then rank themselves, based on past attitudes or behaviors. Having faculty rank themselves before the program may not yield valid results, as faculty have no referent standard

against which to rank themselves. The retrospective pretest set the referent standard as the present, and comparisons were made to the present. The retrospective pretest tool provides additional insights unavailable with other tools, and its use should be considered when appropriate.

The fourth conclusion pertains to the mentoring component of the program. Many participants mentioned mentoring as the most important part of the program. Although the entire OPCP and the mentoring component were online, participants had more personal interactions with each other in the mentoring component of the program. In some instances people made phone contact, and in rare instances, people actually met face to face. In all instances, most of the required mentoring work was conducted online. The bonds mentoring established far exceeded what was required. As in the case of this study, mentoring provided benefits beyond what was anticipated from the program.

The fifth conclusion of this study involves the teaching presence questionnaire tool for faculty self-assessment purposes, which was adapted from the student teaching presence survey. The results from the present study suggest that the new tool is stable and reliable with faculty data. The tool adds to the communal understanding of teaching presence and gives researchers another tool to assess teaching presence.

The sixth and final conclusion of this study relates to using the community of inquiry framework to evaluate professional development activities and the robustness of the community of inquiry framework. The community of inquiry framework was useful in providing a way to assess professional development at a higher level of evaluation. An underlying purpose of this study was to provide a framework to help move assessment of professional development beyond simple reaction surveys upon completion of an event,

to more outcomes-based assessment. In this study, the community of inquiry framework was used to measure and show how aspects of a professional development program can be evaluated beyond what Gusky (2000) called participants' reactions to the event or what D. Kirkpatrick and Kirkpatrick (2006) called Level 1 reaction. The conclusion from this study is that the community of inquiry framework is robust and can be applied to different settings to help expand assessment of professional development opportunities.

### **Limitations of the Study**

The present study is not without limitations. Several limitations of this study should be discussed, as they potentially impact the conclusions and recommendations. The limitations include the case study method selected, the inclusion of only discussion board postings for the content analysis, and self-selected participants.

Some may view the single case study method as a limitation. In this study the single case selected was a unique case with a well-defined professional development program that supported online learning. Other potential cases do not have such a developed program, and the uniqueness of the case selected poses a limitation. As pointed out by Yin (2003), case study research is stereotyped as a weak method, but Yin also argued that criticism is unfounded. However, by their nature, case studies have potential problems with generalization to other cases. While the goal of this study was not to generalize to a larger population, the broader ideas and understanding from this study should be applicable to other settings (Donmoyer, 1990). The understanding about professional development and the community of inquiry that was gained from this study can be transferred to other professional development programs. But any application of

the understanding from this study to other situations needs to factor in the unique nature of this case.

An additional limitation centers on the courses taught by faculty. Some faculty taught courses that were designed by others. Full-time faculty could design their own courses, but many adjuncts could not. If the college had a college-produced course, then adjuncts were expected to use it. Full-time faculty could elect to teach the college-produced course or design their own course. While adjuncts are encouraged to modify college-produced courses, most of the design is already in place, which may limit the amount of interactions faculty have regarding design and organization. Although this impact should be equalized between the two groups of faculty—those who completed the program and those who had not completed the program—it may have had an impact. A lower number of design and organization discussion board posts were observed in this study, compared to the facilitation and direct instruction discussion board posts.

Another limitation of this study deals with the measures of behavior selected for analysis. Self-reported behaviors were collected for one sample, and discussion board postings were selected for the content analysis sample. Students and faculty interact in numerous ways in online classes, such as email, chat sessions, messaging, announcements, and feedback in the grade book. Other behaviors exist that could have been measured and analyzed, but only discussion board postings were examined. In this study, a conscious decision was made to focus on the discussion board postings, as significantly more interactions occur in the discussion boards than in other parts of the course. Additionally, the decision was made to look at reported behavior rather than actual behavior—in part because one focus was on past behaviors, which could not be

observed. Hence, the decision was made to collect self-reported behavior rather than actual behavior, a limitation of the present study.

A fourth limitation revolves around the use of the teaching presence subscales. The data collected do not support the notion that three unique teaching presence subscales exist, although data analysis was conducted using the subscales. The existence of the three teaching presence subscales is somewhat questionable. Shea et al. (2005) found two factors rather than three; however, Arbaugh and Hwang (2006) found three unique factors. The decision to use three factors was based on conceptual reasons. The community of inquiry framework posits that teaching presence consists of three distinct components; therefore, the decision was made to test the theoretical model. Based on this study and other studies, additional research is needed regarding the components of teaching presence.

A fifth and final limitation of the present study is in the area of sampling. Participation in all parts of this study was based on self-selection. Three distinct data sets were collected, and in each case participants elected to participate. Others, however, decided not to participate in the study. Because the selection of participants was not random, sampling bias may have entered into this study. Further, in the case of the first sample the relatively small  $n$  (63) may have attributed to the sample bias. Because the program being evaluated was also the program that I administered, participants with negative experiences may have chosen not to participate. Or, in the case of the content analysis, faculty members with poor online performance may not have volunteered to participate in the study. In either case, there is a possibility of sampling bias, although sampling bias is not believed to exist. In some samples collected for this study, a large

number responded, and the variations in responses would argue against sampling bias. Additionally, some participants provided negative comments and scores, indicating at least some participation by those lacking favorable perceptions of the program. Two online instructors volunteered to participate but told me that they did not use the online discussions. Regardless, sampling bias may be present in this study.

In summary, limitations include the case study method selected, courses designed by someone other than the faculty teaching the courses, the inclusion of only discussion board postings, and sampling bias. These limitations should all be considered. Because the data were triangulated, and the results are consistent with other research, these limitations do not appear to pose any significant problems. However, these limitations do indicate additional avenues for future research.

### **Recommendations for Educational Leadership Action**

As online education becomes more prevalent in higher education, faculty members need support to teach effectively in the online environment. Providing that support in terms of online professional development is attractive because the method is less expensive, and the delivery model reinforces the content by modeling appropriate online teaching. As pointed out by Allen and Seaman (2010b), almost two-thirds of the chief academic officers at institutions of higher learning stated that long-term, online learning was very important to their institutions. Quality online learning is critical, especially because the territorial, geographic walls of education open up with online learning. Educational leaders will face additional competition from schools that in the past may have been allies. In this section I first will outline the reason for a call to action

for educational leaders, and then I will make specific recommendations for actions educational leaders should take regarding online professional development.

Any recommendation for educational leadership action would be remiss to not address the reality that economics play in education. As with all activities in education, the stark reality is that all activities have economic costs. Regardless of how cost is calculated for professional development activities, professional development can and usually does represent a significant amount of money. Educational leaders have limited funds and need to ensure effective spending. If professional development dollars are wisely spent, then educational leaders will have more time and resources to focus on other issues. One reason action is that professional development is tied to the economics of higher education, and current inaction will have future economic consequences.

Another reason educational leaders need to take action deals with the recent focus of accreditation agencies, state governments, and the federal government on institutional effectiveness (Ewell, 2011). Since the U.S. Department of Education Spellings Commission's report in (2006), there has been increased interest in institutional accountability at the collegiate level. Accountability goes beyond direct academic units and applies to all support units. All parts of the institution should be working toward the college mission. Professional development must align with the college's mission and support improved institutional outcomes.

Economics and institutional accountability are two reasons educational leaders must act. Inaction will waste resources and thwart institutional outcomes. The course of action that educational leaders should take includes ensuring that all who teach online receive the necessary professional development prior to and during the time they are

actively teaching, increasing the availability of online professional development opportunities, and insisting on evaluation of professional development activities beyond participants' satisfaction levels.

As illustrated in this study, professional development programs can be offered online. From an educational leader's perspective, the same economic and logistic advantages that exist for offering credit courses online apply to offering professional development online. Educational leaders should explore less conventional and more cost-effective professional development options, such as online learning, and promote these options to faculty. Educational leaders need to leverage tools used for credit courses, such as online learning management systems, for professional development programs.

Educational leaders need to examine the effectiveness of their professional development programs. Effectiveness, however, is seldom measured or examined. A problem that many educational leaders face is that they do not know how to evaluate professional development programs, so they do not require professional development programs to do more than include satisfaction surveys. Educational leaders must demand high-quality, outcomes-based professional development for all who do teach or who want to teach online. Professional development needs to be a priority before faculty teach online. Continual professional development must be part of the enhancement plan for faculty, and educational leaders must support these programs.

The finding of the importance of mentoring in this study also has implications for educational leaders. Based on this study, educational leaders should include a mentoring component in professional development programs, when possible. Faculty learn from

each other and gain confidence when they see what works for others. The mentoring opportunity supplements basic instruction and enhances the professional development experience.

Online teaching and learning is now an element of the American higher education system. Educational leaders should be called to action regarding online learning and online professional development. Educational leaders have the opportunity to impact online learning by supporting quality programs that can demonstrate effectiveness.

### **Recommendations for Future Research**

The purpose of this study was to examine the impact that online professional development had on teaching online. Several recommendations for future research are based on this study, revolving around the broad categories of expanding the use of faculty self-assessment tools, expanding the data-collection process, and researching in the area of professional development.

The first recommendation for future research is to further use and examine the adapted faculty self-assessment teaching presence questionnaire. The present study used a modified version of the community of inquiry student teaching presence instrument (Anderson et al., 2001) for faculty self-assessment purposes. The faculty self-assessment teaching presence instrument should be tested in other settings, to assess the reliability and validity of data collected using the instrument. The tool shows promise, and future research could take many directions. One direction is to examine the relationship between faculty self-assessments and student ratings of faculty. Student perceptions and faculty perceptions may not be the same. Comparing the differences in perceptions may provide additional teaching presence insights. Another potential idea is to look at actual

pre- and post-professional development self-evaluation scores, rather than only looking at retrospective pre-professional development scores. Examining both actual and retrospective pretests would provide a more comprehensive picture of teaching presence. Assessment of professional development activities, both longitudinally and cross-sectionally, might be conducted with the faculty self-assessment instrument. Additional research should continue to test the adapted instrument and examine the robustness of the subscales.

The second recommendation for future research is to expand the scope of the content analysis to include other parts of online courses. This study, as in prior studies on teaching presence, used discussion board postings as the only data source for content analysis. While discussions represent a significant part of many online courses, other types of interaction take place in online classes, such as in chat exchanges, posted announcements, messages, email, and so forth. All of these items could and should be included in future research on teaching presence. The suggestion to include more than online discussions aligns with the recommendation of Archer (2010), who suggested that studies using the community of inquiry framework should go beyond online discussion board postings when assessing teaching presence. Archer suggested the inclusion of longer, written pieces, such as term papers and journals. Beyond what Archer suggested, online classes have many parts, and all of the parts should be researched to better understand online teaching. Outcomes assessment, however, will be costly if all parts of online classes are included.

A third recommendation for future research centers on the teaching presence construct and the dimensions or components of teaching presence. Garrison et al. (2000),

in delineating the community of inquiry framework, conceptualized teaching presence as consisting of design, facilitation, and direct instruction. Over the past decade little research has been conducted to support the notion of three distinct factors of teaching presence. Shea et al. (2005) found three unique factors for teaching presence. However, Arbaugh and Hwang (2006) and Arbaugh et al. (2008) found only two factors. As Garrison (2007) pointed out a few year ago, validation of the teaching presence construct was an issue. The issue has not been resolved, and validation of the teaching presence construct needs additional research.

The final recommendation for research focuses on the field of professional development. In this study the community of inquiry framework was applied to an online professional development program, with the intent of evaluating the program. The community of inquiry framework was selected because the framework aligned with the philosophy of the OPCP. Other theoretical frameworks exist and may also apply. Future research should explore other frameworks, to see if they could be applied to help evaluate professional development activities. The intent would be to apply other frameworks for the purpose of evaluation beyond the immediate satisfaction level. Future research in the area of professional development needs to explore program evaluation at the outcomes level.

In summary, at least three distinct paths for future research stem from this study. The first path of future research involves the faculty self-assessment questionnaire. The second path focuses on expanding the community of inquiry framework content analysis. The final path involves professional development and research on evaluation of

professional development activities. Whereas some questions were answered with this study, many additional questions were raised.

### **Conclusion**

The purpose of this study was to explore the impact that online professional development had on teaching online, using the community of inquiry framework. A mixed methods approach was used to explore the research questions and subquestions. The findings support the notion that online professional development can impact online teaching, and educational leaders need to support professional development. The findings also suggest the need for additional research, such as in the areas of the dimensions of teaching presence and expanding the use of the teaching presence instruments.

Faculty members who completed the OPCP reported changes in attitudes, behaviors, and knowledge. Faculty members were more interactive and more facilitative in their online classrooms after the program, compared to before the program. The changes found in teaching presence were consistent with the desired outcomes of the OPCP; however, the desired outcomes were not as great as expected.

Educational leaders have an economic interest in this issue, as online enrollments increased significantly over the past decade, and the trend is likely to continue (Allen & Seaman, 2010b). As online learning enrollments grow, the need for high-quality online teaching will continue. Faculty need professional development programs to help them become more effective online teachers. The professional development programs need to be evaluated for effectiveness beyond the satisfaction level, and the focus should be on program outcomes.

Online learning is now a significant part of higher education in the United States. The issues of quality, effectiveness, and appropriateness of online learning are debated topics that educational leaders need to address. Educational leaders must use available tools to ensure that faculty members are prepared for high-quality online teaching. These tools include professional development programs and professional development evaluation instruments, such the teaching presence component of the community of inquiry framework. Evaluation of professional development activities is critical to ensure quality. Educational leaders must demand that professional development programs demonstrate their effectiveness beyond the satisfaction level. Students are entitled to quality instruction, online and face-to-face, from competent, prepared faculty. Educational leaders must ensure that students receive quality instruction from faculty who have received high-quality, relevant, and evaluated professional development. Well-designed online professional development programs can achieve this goal.

APPENDIX A  
ONLINE PROFESSOR CERTIFICATE PROGRAM INFORMATION

## ONLINE PROFESSOR CERTIFICATE PROGRAM

February 7, 2007

### PURPOSE and SPONSORS

This program has been developed to provide faculty development opportunities which facilitate optimum student learning in fully online courses—whether students reside in physical proximity to an FCCJ campus or at remote sites. The program is sponsored by the Center for the Advancement of Teaching and Learning, Florida Community College University (FCCU), Organizational Learning Services, and the Office of the Executive Vice President. It is under the direction of Organizational Learning Services.

### ELIGIBILITY and CERTIFICATE

This special certificate program is open only to FCCJ full-time and adjunct faculty. It requires a commitment of approximately 48 hours for completion of the training, plus nine (9) hours service as an Online Mentor or other specialist for other FCCJ faculty following completion of the training. Upon completion of the 48 hours of training plus the 9 hours service, the College will provide a Certificate from Professional Development for Instructional Technology. In addition, faculty will receive other benefits as noted below.

### CREDIT FOR PRIOR TRAINING/SKILLS DEVELOPMENT

Faculty who have previously completed some of the required courses or who have attained the skills in other ways may receive credit towards the Certificate by presenting appropriate documentation. FCCU will have sole authority to accept or reject requests for credit for prior training. *In no case* will credit be awarded for the mentee or mentor online experience requirements.

### TRAINING PROGRAM/COURSES

**Training programs are completely online and are provided fall, spring and summer sessions.** Training includes the courses listed below, which provide skills in the online course development platforms supported by the College, knowledge and skills in applying the results of learning and motivation research to online learning (pedagogy/andragogy), and mentored online learning experiences. Faculty must have received training (or demonstrate working knowledge) of Word™, PowerPoint™ and Outlook™ before applying for this program.

**Developing Interactive Web-Based Courses**—15 hours. Basic orientation to online pedagogy/andragogy. Includes an introduction to instructional design and uses of

mastery, cooperative and constructivist learning and development of learning communities. Faculty must complete a capstone requirement by developing a syllabus for an online course using the interactive methods modeled in the CREating Optimum Learning Environments (CREOLE) course.

**Blackboard®**—12 hours. Orientation to use of platform in online course development and applications of platform to meet specific online course development needs.

**Multimedia**—6 hours. **Basic applications of multimedia** with emphasis on learning objects.

**Capstone—Creative Online Course Development and Teaching**—6 hours. This workshop provides faculty with an orientation to the resources available through the College to support online course development and teaching. It is presented both online and face-to-face. In the latter, full-day session, nationally-known educators and other guest speakers present world-views of online learning. *Persons enrolled in the Certificate program must have completed or received a waiver for platform courses (Blackboard®), multimedia and Developing Interactive Web-based Courses PRIOR to completing the Capstone Course in order to receive credit for it.*

**Mentored Online Learning Experience**—a total of 9 hours mentored online teaching experience. This experience needs to be gained during the initial online course taught following the completion of the above courses. Mentoring is provided by faculty colleagues who have completed the training in the program and have served as a mentee. *In no case will credit be awarded by FCCU for the mentored online experience requirement.*

**Serving as Online Mentor**—Faculty are required to serve as an Online Mentor or other specialist for 9 hours during one term for other faculty who are completing the training leading to the Certificate.

***UPON COMPLETION OF THE ABOVE, FACULTY RECEIVE A CERTIFICATE SIGNED BY THE COLLEGE PRESIDENT. IN ADDITION:***

1. Adjunct faculty receive an honorarium of \$500.
2. The campus academic department of the full-time faculty member who has received the Certificate receives a \$500 Credit Award—to be used for any of the following pertaining to their academic field or online learning: software; books; attendance at professional conferences; costs of professional development outside FCCJ; or costs of experimental educational projects.

APPENDIX B  
COMMUNITY OF INQUIRY STUDENT QUESTIONNAIRE  
(CURRENT VERSION: DRAFT 14)

***Teaching Presence***

*Design & Organization*

1. The instructor clearly communicated important course topics.
2. The instructor clearly communicated important course goals.
3. The instructor provided clear instructions on how to participate in course learning activities.
4. The instructor clearly communicated important due dates/time frames for learning activities.

*Facilitation*

5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.
8. The instructor helped keep the course participants on task in a way that helped me to learn.
9. The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.

*Direct Instruction*

11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses.
13. The instructor provided feedback in a timely fashion.

### ***Social Presence***

#### *Affective expression*

14. Getting to know other course participants gave me a sense of belonging in the course.
15. I was able to form distinct impressions of some course participants.
16. Online or web-based communication is an excellent medium for social interaction.

#### *Open communication*

17. I felt comfortable conversing through the online medium.
18. I felt comfortable participating in the course discussions.
19. I felt comfortable interacting with other course participants.

#### *Group cohesion*

20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.

### ***Cognitive Presence***

#### *Triggering event*

23. Problems posed increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.

#### *Exploration*

26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Online discussions were valuable in helping me appreciate different perspectives.

#### *Integration*

29. Combining new information helped me answer questions raised in course activities.
30. Learning activities helped me construct explanations/solutions.

31. Reflection on course content and discussions helped me understand fundamental concepts in this class.

*Resolution*

32. I can describe ways to test and apply the knowledge created in this course.

33. I have developed solutions to course problems that can be applied in practice.

34. I can apply the knowledge created in this course to my work or other non-class related activities.

5 point Likert-type scale

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

APPENDIX C  
COMMUNITY OF INQUIRY ADAPTED QUESTIONNAIRE FOR FACULTY

**Demographic Information**

- 1) What is your teaching discipline?
  - a) Communications
  - b) Humanities
  - c) Mathematics
  - d) Natural Sciences
  - e) Social and Behavioral Sciences
  - f) Workforce
  - g) Other \_\_\_\_\_ (please specify)
  
- 2) How many years have you been teaching at the college level?
  - a) 0-2
  - b) 3-5
  - c) 6-10
  - d) 11+
  
- 3) How many years have you been teaching online classes?
  - a) 0-2
  - b) 3-5
  - c) 6-10
  - d) 11+
  
- 4) What is your highest level of education completed?
  - a) Earned Bachelor's Degree
  - b) Some college work at the Master's level
  - c) Earned Master's Degree
  - d) Some college work at the Doctoral level
  - e) Earned Doctorate
  - d) Other \_\_\_\_\_ (please specify)

**To the best of your ability, answer the following questions below based on your teaching practices BEFORE enrolled in the Online Professor Certificate Program.**

The following 5 point Likert-type scale should be used

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

***Teaching Presence***

- 5) I clearly communicated important course topics.
  
- 6) I clearly communicated important course goals.

- 7) I provided clear instructions on how to participate in course learning activities.
- 8) I clearly communicated important due dates/time frames for learning activities.
- 9) I was helpful in identifying areas of agreement and disagreement on course topics that help students to learn.
- 10) I was helpful in guiding the class towards understanding course topics in a way that help students clarify their thinking.
- 11) I helped to keep course participants engaged and participating in productive dialogue.
- 12) I helped keep the course participants on task in a way that help students to learn.
- 13) I encouraged course participants to explore new concepts in this course.
- 14) I reinforced the development of a sense of community among course participants.
- 15) I focused discussion on relevant issues in a way that helps students to learn.
- 16) I provided feedback that helps students understand their strengths and weaknesses.
- 17) I provided feedback in a timely fashion.

**Please answer the following questions reflecting how you feel about your CURRENT teaching practices.**

The following 5 point Likert-type scale should be used

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

### ***Teaching Presence***

- 18) I clearly communicated important course topics.
- 19) I clearly communicated important course goals.
- 20) I provide clear instructions on how to participate in course learning activities.
- 21) I clearly communicate important due dates/time frames for learning activities.
- 22) I am helpful in identifying areas of agreement and disagreement on course topics that help students to learn.
- 23) I am helpful in guiding the class towards understanding course topics in a way that help students clarify their thinking.

- 24) I help to keep course participants engaged and participating in productive dialogue.
- 25) I help keep the course participants on task in a way that help students to learn.
- 26) I encourage course participants to explore new concepts in this course.
- 27) I reinforce the development of a sense of community among course participants.
- 28) I focus discussion on relevant issues in a way that helps students to learn.
- 29) I provide feedback that helps students understand their strengths and weaknesses.
- 30) I provide feedback in a timely fashion.

**APPENDIX D  
CONTENT ANALYSIS CODE SHEET**

Coding Sheet								
Case No. _____								
Post No.	Instructional Design	Facilitating Discourse	Direct Instruction	Instructional Design & Facilitating Discourse	Instructional Design & Direct Instruction	Facilitating Discourse & Direct Instruction	Instructional Design, Facilitating Discourse, & Direct Instruction	None
	1	2	3	4	5	6	7	8
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25								
Comments								

## APPENDIX E INTERVIEW QUESTIONS

Introduction: Thanks for volunteering to share some of your insights about the online certificate program. Remember that the program consisted of five parts: Developing Interactive Web-based Courses, Blackboard®, Multimedia, Capstone and Mentoring (Interviewees will be provided a list of the program courses and activities along with short descriptions of the courses and activities).

### Interview Questions

- 1) Why did you sign up for the professional development program known as the Online Professor Certificate Program?
- 2) What was your general approach and attitude about online teaching before enrolling in the Online Professor Certificate Program?
- 3) What is your general approach and attitude about online teaching since completing the Online Professor Certificate Program?
- 4) What changes in your attitudes about online teaching happened as a result of the professional development program?
- 5) What part of the program had the most impact on changing your attitudes about teaching?
- 6) Explain which part of the online professor certificate program has had the most impact on you as a teacher of online students.
- 7) How has your involvement in this professional development program affected the students you teach?
- 8) Tell me how the certificate program has impacted student outcomes in your online courses.
- 9) How did your teaching change as a result of the professional development program?
- 10) Is there anything that you would like to add about the professional development program or do you have any questions for me?

APPENDIX F  
 INSTITUTIONAL REVIEW BOARD APPROVAL LETTER:  
 UNIVERSITY OF NORTH FLORIDA



Office of Research and Sponsored Programs  
 1 UNF Drive  
 Jacksonville, FL 32224-2665  
 904-620-2455 FAX 904-620-2457  
 Equal Opportunity/Equal Access/Affirmative Action Institution

**MEMORANDUM**

**DATE:** November 4, 2010

**TO:** Mr. William Ganza

**VIA:** Dr. Katherine Kasten  
 Leadership, Counseling, and Instructional Technology

**FROM:** Dr. Kareem Jordan, Vice Chairperson  
 On behalf of the UNF Institutional Review Board

**RE:** Review by the UNF Institutional Review Board IRB#10-105:  
 "The Impact of Online Professional Development on Online Teaching in Higher Education"

UNF IRB Number: 10-105  
 Approval Date: 11-04-10  
 Revision Date: \_\_\_\_\_

This is to advise you that your project, "The Impact of Online Professional Development on Online Teaching in Higher Education," has undergone "expedited, category #6 & #7" review on behalf of the UNF Institutional Review Board and was approved.

This approval applies to your project in the form and content as submitted to the IRB for review. Any variations or modifications to the approved protocol and/or informed consent forms as they relate to dealing with human subjects must be cleared with the IRB prior to implementing such changes. Any unanticipated problems involving risk and any occurrence of serious harm to subjects and others shall be reported promptly to the IRB.

**Your study has been approved for a period of 12 months.** If your project continues for more than one year, you are required to provide a Continuing Status Report to the UNF IRB prior to **10/04/2011** if your study will be continuing past the 1-year anniversary of the approval date. *We suggest you submit your status report 11 months from the date of your approval date as noted above to allow time for review and processing.*

As you may know, **CITI Course Completion Reports are valid for 3 years.** Dr. Kasten's completion report is valid through 04/22/2011 and Mr. Ganza's completion report is valid through 11/21/2012. If your completion report expires within the next 60 days or has expired, please take CITT's refresher course and contact us to let us know you have completed that training. If you have not yet completed your CITI training or if you need to complete the refresher course, please do so by following this link: <http://www.citiprogram.org/>. Based on your research interests we ask that you complete either the "Group 1 Biomedical Research Investigators and Key Personnel" CITI training or the "Group 2 Social Behavioral Researcher Investigators and Key Personnel" CITI training.

Should you have questions regarding your project or any other IRB issues, please contact the Office of Research and Sponsored Programs at 904.620.2455.

APPENDIX G  
INSTITUTIONAL REVIEW BOARD APPROVAL LETTER:  
FLORIDA STATE COLLEGE JACKSONVILLE



FLORIDA STATE COLLEGE  
AT JACKSONVILLE™

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RE: Permission Letter to Conduct a Study by William Ganza, doctorate student at the University of North Florida

November 1, 2010

Bill Ganza  
Florida State College at Jacksonville  
501 West State Street  
Jacksonville, FL 32202

Bill:

This letter is to grant permission for you to conduct a research study of online course instruction for the dissertation topic "*The Impact of Online Professional Development on Online Teaching in Higher Education.*" As explained in your request, faculty who teach online courses at Florida State College at Jacksonville will be recruited via College email. They will be invited to participate in an interview, complete a survey. They will grant permission to review their Blackboard online course content. Their participation in this study will be voluntary and each participant will be advised of the nature of the study.

The research activities do not appear to present more than minimal risk to the human subjects. The probability and magnitude of physical or psychological harm or discomfort anticipated in the research do not appear to be greater in and of themselves than those normally encountered in daily life or during the performance of routine examinations or tests. If there are any changes made to the program or the project protocol, or if the project extends over a period of one year, please notify my office immediately.

You may obtain permissions and arrange for the logistics of your study by contacting Dr. Jack Chambers, Associate Vice President for Organization Learning (or his designee). Good luck with your project.

Sincerely,

~~Signature~~  
Signature Deleted

Dr. Donald Green Jr.  
Executive Vice-President for Instruction and Student Services  
Florida State College at Jacksonville

CC: Dr. Jack Chambers

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## VITA – William John “Bill” Ganza

**EDUCATIONAL EXPERIENCE**

<b>Degree</b>	<b>University</b>	<b>Discipline</b>	<b>Enrollment</b>
EdD	University of North Florida	Educational Leadership	9/2006 – 9/2012
	University of Florida	Higher Education Administration	9/2005 - 8/2006
	University of Georgia	Sociology – Demography	9/1984 – 9/1991
MS	Illinois State University	Sociology – Family Studies	6/1981 – 12/1984
BS	Illinois State University	Psychology – Learning/Motivation	6/1979 – 6/1981
	Illinois Wesleyan University	Psychology – Child Development	8/1976 – 6/1978

**PROFESSIONAL EXPERIENCE****Director of Faculty Development**

Florida State College at Jacksonville (FSCJ) Jul 2005 – Present

**Adjunct Instructor**

Florida State College at Jacksonville (FSCJ) Feb 2004 – Present

**Compensated Validator**

National Association for the Education of Young Children Oct 2003 – Jul 2005

**Educational Trainer and Consultant**

Self-Employed Oct 1996 – Dec 2005

**Chief Learning Officer**

Professional Training and Consulting May 1999 – Nov 2004

**Executive Director- Project Coordinator**

Magic Years of Learning, Athens Feb 1996 – May 1999

**Assistant Professor, Social Sciences Department**

Anderson College Sep 1989 – Jul 1995

**SELECTED MEMBERSHIPS AND PARTICIPATIONS**

Association of Florida Colleges (AFC), FSCJ, Sep 2009 – Present  
 Administrative Professional Collaborative (APC), Jul 2010 – Present  
 Florida Faculty Development Consortium (FFDC), Jan 2006 – Present  
 College Technology Committee, Feb 2006 – Present  
 Blackboard Advisory Committee, Jan 2006 – Present